

# Chemical Week

November 12, 1955

Price 35 cents

*The labor picture now is like a time bomb — nobody knows when it's going to go off.*



▶ Three quarters' earnings prove prosperity is rampant; but some worries cloud the horizon . p. 24

There's a trend toward bigger detergent packages; here's what's going on and why . . . . . p. 50

Six years of vinylidene cyanide research underlie Goodrich's new synthetic fiber . . . . . p. 80

▶ Piston engines now propel use of additives; but will turbines curtail this chemical market? . . . p. 95

Small firms as well as large can benefit from low-cost, well-planned exhibits . . . . . p. 110

TO: *CS<sub>2</sub> Users Everywhere  
East of the Rockies*

**FROM: AMERICA'S LARGEST CONTINUOUS PROCESS  
CARBON BISULFIDE PLANT**

An exceptional plant and patented process makes Westvaco Carbon Bisulfide an exceptionally fine product, to wit:

1. 99.9% pure, comparable to what is usually considered C.P. or reagent grade.
2. Colorless, crystal clear.
3. Now being used with complete satisfaction by makers of rayon, cellophane, cellulose sponges, rubber and rubber accelerators, fumigants, pesticides, industrial solvents, etc., etc.
4. Promptly available anywhere East of the Rockies.
5. Traditional Westvaco attention to sales-service detail in handling your orders, routing shipments and meeting your requirements.

Send for a sample price and delivery quotation from Westvaco.



**Westvaco**  
CHEMICALS

**Westvaco Chlor-Alkali Division**  
**FOOD MACHINERY AND CHEMICAL CORPORATION**

General Offices

161 East 42nd Street, New York 17

CHARLOTTE, N. C. • CHICAGO, ILL. • DENVER, COLO. • PHILADELPHIA, PA. • ST. LOUIS, MO.





*Photo courtesy Ames Rubber Corporation, Hamburg, N. J., and Empire Brushes, Inc., Fort Chester, N. Y.*

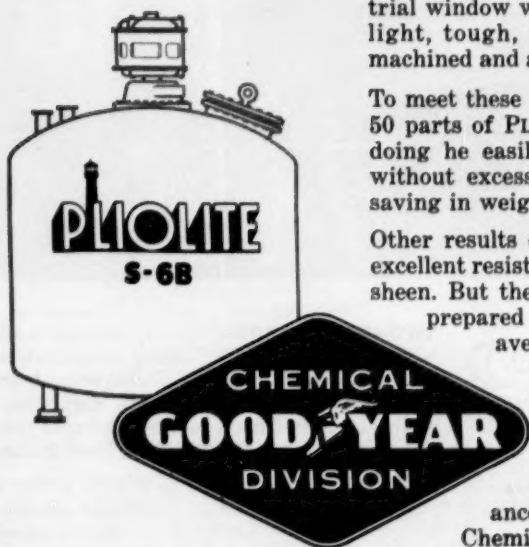
## Easy solution to a Hard Rubber Problem!

Pictured above is the molding of a semihard rubber head for an industrial window washing brush. In addition to being hard, it must be light, tough, abrasion-, water- and chemical-resistant, easily machined and attractive.

To meet these requirements, the molder uses a compound based on 50 parts of **PLIOLITE S-6B** per 100 parts of styrene rubber. By so doing he easily achieves the necessary hardness and toughness, without excessive loading, and with an important quarter-pound saving in weight.

Other results of using **PLIOLITE S-6B** are excellent machinability, excellent resistance to all forms of abuse and an eye-catching surface sheen. But the big bonus lies in the ease with which the stock is prepared and molded and the fidelity of reproduction. Rejects average much less than 1% compared to as high as 8% on highly loaded stocks.

**PLIOLITE S-6B** is the high styrene-butadiene copolymer specifically designed to be easy-processing. How can it help your product through added stiffness, hardness, toughness, lighter weight or resistance to age and abrasion? For details, write to: Goodyear, Chemical Division, Dept. K-9417, Akron 16, Ohio.



Chemigum, Pliobond, Plioflex, Pliolite, Plio-Tuf, Pliovic - T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

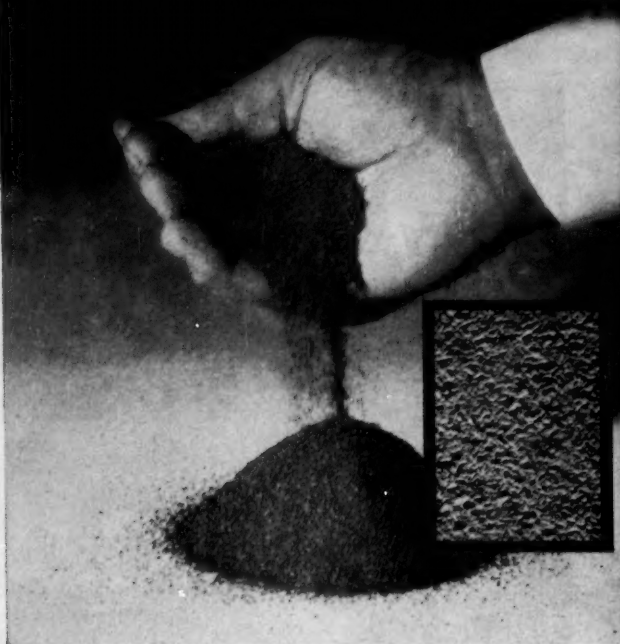
The Finest Chemicals for Industry—CHEMIGUM • PLIOBOND • PLIOFLEX • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS

November 12, 1955 • Chemical Week

# 3

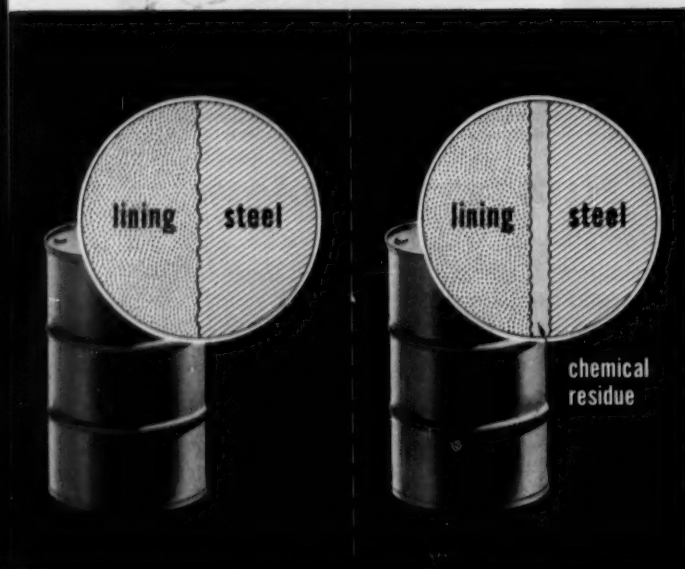
*important reasons...*

## WHY RHEEM STEEL DRUMS ARE YOUR BEST BUY



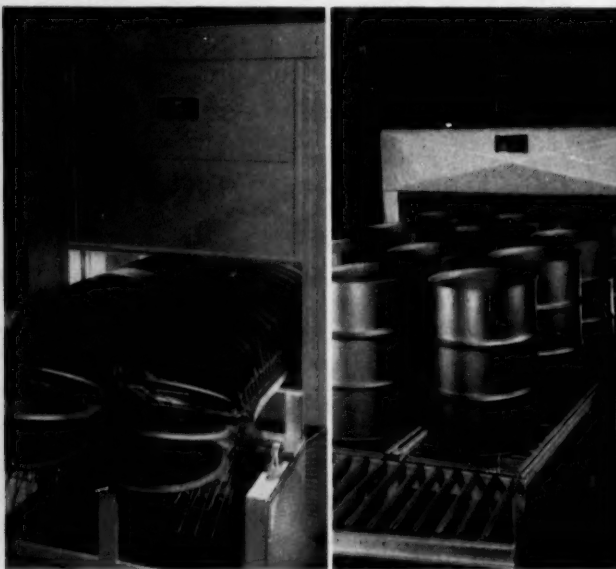
### 1

**SHOT-BLASTING.** Rheem physically cleans its steel by shot-blasting so that protective linings or exterior coatings get a *bulldog grip* on the hills and valleys in scientifically roughened steel.



### 2

**INTEGRATED LININGS.** Rheem linings are bonded *directly to the steel* as shown at left. They're *integrated* . . . so there's nothing between the steel and lining to cause flaking and peeling—there's nothing that can be attacked by the packaged chemicals.



### 3

**TWO-OVEN BAKING.** Quality linings produced with an application, and baking equipment, developed exclusively by Rheem. Curing requires precise temperature control in pre-heat, high-bake, and cooling sections. This is done by Rheem to give you the ultimate in quality controlled lined drums.

*only Rheem does all three!*

YOU CAN RELY ON



MANUFACTURING COMPANY

7600 S. Kedzie

Chicago 29, Ill.

World's Largest Manufacturer of Steel Shipping Containers

RICHMOND AND SOUTH GATE, CALIF., HOUSTON,  
CHICAGO, NEW YORK, NEW ORLEANS, LINDEN,  
N. J. AND SPARROWS POINT, MARYLAND.



November 12, 1955

Vol. 77, No. 20

**Publisher** . . . . . Wallace F. Traendly  
**Editorial Director** . . . . . Sidney D. Kirkpatrick  
**Editor** . . . . . W. Alec Jordan  
**Managing Editor** . . . . . Howard C. E. Johnson

#### DEPARTMENT EDITORS

**Business & Industry** . . . . . Jane H. Cutaia  
**Markets** . . . . . Anthony J. Piombino  
**Production** . . . . . Donald P. Burke  
**Research** . . . . . Ralph R. Schulz  
**Specialties** . . . . . J. R. Warren  
**Special Projects** . . . . . Homer Starr  
**Reports** . . . . . Michael L. Yaffee  
**Illustration, Format** . . . . . Donald R. Thayer  
**Copy** . . . . . William Mullinack  
**Buyers' Guide** . . . . . Alvin J. Babbow

#### ASSISTANT EDITORS

**Business & Industry** . . . . . Vincent L. Marsilia  
**Distribution** . . . . . John M. Winton  
Cooper R. McCarthy  
**Markets** . . . . . Jorma Hyypia  
**Production** . . . . . Kenneth Wilsey  
**Research** . . . . . Joseph F. Kalina  
**Specialties** . . . . . Charles Joslin

#### REGIONAL EDITORS

**Midwest** . . . . . Frank C. Byrnes, Chicago  
**Southwest** . . . . . James A. Lee, Houston  
**West Coast** . . . . . Elliot Schrier, San Francisco

#### EDITORIAL ASSISTANTS

Virginia Clark . . . . . Magnhild Lovaas  
Peter Madden . . . . . Kay Sebiry

#### NATIONAL NEWS

**Economics** . . . . . Dexter M. Keezer, *Director*  
Douglas Greenwald, Robert P. Ulin  
**Atlanta** . . . . . William Kearns  
**Cleveland** . . . . . Robert E. Cochran  
**Detroit** . . . . . Harry Homewood  
**Los Angeles** . . . . . John Shinn  
**San Francisco** . . . . . Margaret Ralston  
**Washington** . . . . . George B. Bryant, Jr.  
Correspondents in 73 principal cities.

#### WORLD NEWS

**Editor** . . . . . John Wilhelm  
**London** . . . . . Edward W. S. Hull  
**Paris** . . . . . John O. Coppock  
**Bonn** . . . . . Gerald W. Schroder  
**Rio de Janeiro** . . . . . Peter Weaver  
**Mexico City** . . . . . John H. Kearney  
**Tokyo** . . . . . Dan Kurzman  
**Bombay** . . . . . Gordon Graham  
Correspondents in 44 capitals and principal cities.

**Advertising Director** . . . . . Robert S. Muller  
**Advertising Sales Mgr.** . . . . . Steven J. Shaw  
**Business Manager** . . . . . Anton J. Mangold  
**Sales Promotion Mgr.** . . . . . E. A. Atwood, Jr.  
**Market Service Mgr.** . . . . . Adolph I. Losick  
**Advertising Salesmen** . . . . . See p. 116

# Chemical Week

## TOP OF THE WEEK

**Capital spending plans**—for both next year and the year after—betoken continued high business activity in the years ahead . . . . .p. 18

**Prosperity was never brighter**, but management men see labor and pollution problems, Washington politicking, and integration in the South clouding the 1956 sky . . . . .p. 25

**You can reduce down-time on a major production change** if you carefully schedule each step beforehand. National Petro-Chemical's recently completed change-over is a case in point . . . . .p. 66

**The exhibition season is here**—and small firms can profit from professional display designers' tips . . .p. 110

### 8 OPINION

#### 13 BUSINESS NEWSLETTER

17 High-tariff views of a large sector of chemical industry under attack

20 Following in labor unions' footsteps, scientists and engineers ask premium pay for overtime

#### 21 WASHINGTON ANGLES

24 Sales, net profits for first three quarters soar toward new highs

26 It's under wraps, but the Administration is trying to protect U.S. industry now by means other than tariffs

28 Test case against one firm may set criteria for issue of anti-pollution injunctions

32 In double harness for company and industry: MCA's current committee line-ups

34 Labor unions' organizing drive hits snag as Southern chemical workers put trust in management

#### 39 CHARTING BUSINESS

#### 50 SPECIALTIES

Roll out the barrel—syndet makers sing song of larger packages

54 Gallon by gallon, pound by pound—the facts on floor product output

### 66 PRODUCTION

68 Becco develops in situ epoxidation process featuring throw-away ion exchange catalyst

### 77 TECHNOLOGY NEWSLETTER

### 80 RESEARCH

Behind Goodrich's Darlan: six years of vinylidene cyanide research

86 New antibiotics narrow range of "immune" microorganisms

### 95 MARKETS

Turbine auto engines, revving up for action by 1965, will force radical changes in today's fast growing automotive chemical additives market

### 103 MARKET NEWSLETTER

### 106 DISTRIBUTION

Purchasing is tacking toward a science but problems dot its course. Here's a round-up

108 Commercial Solvents uses the symposium for promotion

112 Congressmen ponder more stringent barbiturate and amphetamine distribution as reports of bootlegging mount



Chemical Week (including Chemical Specialties and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc. James H. McGraw (1860-1948), founder, Executive, Editorial and Advertising Offices; McGraw-Hill Building, 230 W. 42nd St., New York 36, N. Y. Publication Office: 1300 Noble St., Philadelphia 28, Pa. Donald C. McGraw, President; Paul Montgomery, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice-President, Publication Division; Ralph B. Smith, Vice-President and Editorial Director; Joseph H. Allen, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Circulation Director.

Subscriptions to Chemical Week are solicited from management men in the chemical process industries, Pesticides and company connections must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 230 W. 42nd St., New York 36, N. Y., or 1300 Noble St., Philadelphia 28, Pa. Allow one month for change of address.

Single copies \$5 except Annual Buyer's Guide issue, priced at \$2.50. Subscription rates—United States and Possessions \$5.00 a year; \$8.00 for two years; \$10.00 for three years. Canada \$6.00 for a year; \$10.00 for two years; \$12.00 for three years. Other Western Hemisphere Countries \$15.00 a year; \$25.00 for two years; \$35.00 for three years. All other countries \$25.00 a year; \$40.00 for two years; \$55.00 for three years. Second-class mail privilege. Authorized at Philadelphia, Pa. Copyright 1955 by McGraw-Hill Publishing Co. Inc.—All rights reserved.

THE BUSINESS MAGAZINE OF THE CHEMICAL PROCESS INDUSTRIES



# Put This Plant Behind Your Product



Here at Publicker, we maintain that users of our products can no more afford to take chances with quality than we can. Consequently, every drop in every gallon or tank car is exactly according to speci-

fications—always. And Publicker's ultra-modern equipment and vast facilities account for outstanding service to a long list of satisfied customers. May we have the opportunity of meeting *your* requirements?



## PUBLICKER INDUSTRIES

1429 WALNUT STREET, PHILADELPHIA 2, PA.

NEW YORK & NEW ENGLAND DISTRIBUTOR, PUBLICKER ALCOHOL & CHEMICAL SALES CORPORATION

PHILADELPHIA—LOCUST 4-1400 • NEW YORK—OXFORD 5-4160 • BOSTON—HOMESTEAD 9-0022 • CHICAGO—RANDOLPH 6-6678 • CLEVELAND—CHERRY 1-6

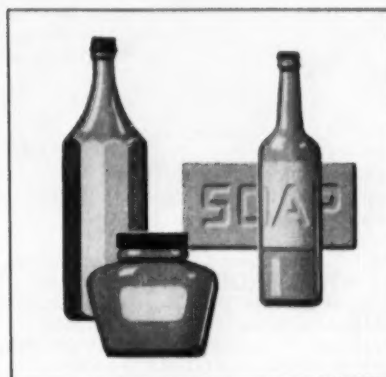




COSMETICS



PHARMACEUTICALS



HOUSEHOLD PRODUCTS



PLASTICS

ETHYL ALCOHOL • BUTYL ALCOHOL, NORMAL  
BUTYL ACETATE, NORMAL • ETHYL ACETATE  
BUTADIENE • ACETIC ACID GLACIAL  
ACETONE C.P. • AMYL ACETATE  
FUSEL OIL, REFINED • ISOAMYL ALCOHOL  
PACO SOLVENT T.R. 590

SINC.



## A Successful Formula for CHEMICAL PLANT LOCATION

Like all good formulas this one has been proven over and over again by actual practice. In WEST VIRGINIA the chemical industry has grown, flourished and prospered. Vast installations and tremendous investments by major companies show this to be so.

"R" . . . is the symbol that stands for *resources*—which abound in great variety in WEST VIRGINIA and in great abundance. From West Virginia's brines, natural gas, water and coal a new field in chemical development was originated.

"L" . . . the second letter of the formula represents one of WEST VIRGINIA's greatest gifts to industries—its *central location*. This location is advantageous not only in one direction but in 4—the markets and people of the *East, West, North and South* are within a day's journey of WEST VIRGINIA'S borders.

"P" . . . is for the *power* every industry needs and in WEST VIRGINIA your plant can have power in abundance, whether you wish to use *coal, electricity or natural gas*. WEST VIRGINIA'S utilities are cooperative,

and have undergone great development in recent years. Here you find power at its source.

"W" . . . is for two of WEST VIRGINIA'S most important assets—its *workmen and water*. Industry coming into WEST VIRGINIA has found that the labor supply, besides being adequate and dependable, is adaptable, quick to learn and quick to produce. Important tributaries of great river systems rise in the state, plus water from prolific shallow wells suitable for many industrial uses.

"T" . . . is for the hand-maiden of industry—*transportation*. WEST VIRGINIA is fortunate in having navigable waterways. Its railroads make fast connections with the principal cities everywhere. Motor freight speeds over modern highways, including a new turnpike which will save every shipper time and money.

*Cooperative civic and governmental agencies will be glad to assist you in any way in obtaining information on West Virginia . . . The Industrial Suburb to the United States. Address your inquiry to: Mr. Andrew V. Ruckman, Executive Director, West Virginia Industrial & Publicity Commission, State Capitol Building, Room 1112, Charleston 5, West Virginia.*

# West Virginia

MARKETS • MATERIALS • MANPOWER

NEW CHEMICAL HORIZONS



FPG

## TARSET®—

### Revolutionary New Corrosion Fighter for the Oil Industry



Now, for the first time—the nation's vital petroleum industry is able to protect its costly producing and storage equipment with an economical, easily applied protective coating which withstands severest corrosion attack.

This revolutionary new corrosion fighter is Pitt Chem Tarset, a unique combination of two *proven* protective agents—coal tar and epoxy resin. It is the toughest, hardest coating of its type every produced from coal tar.

Because of its amazing ability to withstand sulphur compounds and

brine found in crude oil, a large part of our initial production of Tarset has been earmarked for interior protection of crude oil storage tanks and experimental use in oil well casing.

However, as production increases, larger quantities are being made available for other vital applications. For example, tests indicate that Tarset is immune to attack from diesel fuel, aviation gasoline and jet fuel. It appears equally resistant against corrosive chemicals such as hydrochloric acid, sodium hydroxide and salt solutions.

Subjected to temperatures as high as 400°F., Tarset actually becomes *harder* instead of softer, as most coatings of

this type do! And it can be economically applied by brush, spray or roller.

Creating protective coatings to extend the life of industry's capital equipment is one more way in which Pittsburgh Coke & Chemical provides you with better products... *through research.*

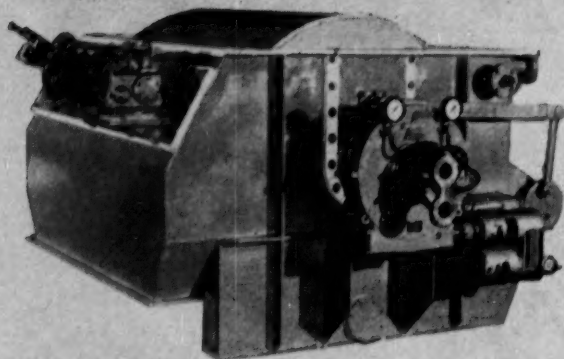


W&O 6641

COAL CHEMICALS • AGRICULTURAL CHEMICALS • FINE CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

November 12, 1955 • Chemical Week





## Absolute Purity of Product Maintained with Eimco Filters

Absolute purity of product is maintained when using Eimco continuous vacuum or pressure filters. The picture above illustrates one of the many Eimco filters being used by industries that must maintain absolute purity such as antibiotics and other pharmaceuticals, food and allied industries and chemical industries.

To meet the requirements of these industries, Eimco makes all filters to specifications produced by cooperative efforts of the customer's engineering staff and Eimco's Research and Development engineers.

The filter shown above is a high submergence type filter designed for use with precoat material. The drum is all type 316 stainless steel and the tank is of mild steel with  $\frac{1}{4}$ " thick PVC lining. The lining is carried out through flanged connections and bolt-on-assemblies so that the white PVC material is visible from the outside. This filter is equipped with the Eimco Hyflow automatic valve for greatest efficiency in operation and the Eimco knife advance mechanism.

All of these features are significant to the type of application for this particular filter. Your problem receives the same detailed consideration by Eimco engineers who are specialized in filtration equipment. That is the reason Eimco filters work better, last longer, produce more and require less maintenance, square foot per square foot, than any other filter.

Write for more information on your specific problem.

### THE EIMCO CORPORATION

Salt Lake City, Utah, U.S.A.

Export Office: Eimco Bldg., 52 South St., New York City



New York, N.Y. Chicago, Ill. San Francisco, Calif. El Paso, Tex. Birmingham, Ala. Duluth, Minn. Kellogg, Ida.  
Baltimore, Md. Pittsburgh, Pa. Seattle, Wash. Pasadena, Calif. Houston, Texas Vancouver, B.C. London, England  
Gateshead, England Paris, France Milan, Italy Johannesburg, South Africa

## OPINION . .

### 'Oo' as in Prune

TO THE EDITOR: You have been listening to a disk jockey's blurb for wax polish. It's pronounced "car-knob-ah" wax. (CW, Oct. 29, p. 83) . . .

A. L. FOWLER  
Metuchen, N.J.

*Infect how you wish, but we still stand behind car-nah-oó-bah. (From the Portuguese "carne" and Tupy Indian "uba.")—ED.*

### British Dodecyl

TO THE EDITOR: In the brief item on dodecyl benzene (Oct. 29, p. 36), you say, "Shell Chemical will build a dodecyl benzene plant in Essex, England—timed to coincide with Monsanto's similar project at Grangemouth, Scotland. . ."

The dodecyl benzene plant at Grangemouth that you refer to is owned by Grange Chemical, which in turn is owned by British Petroleum Chemical and Oronite Chemical. It will be in operation in 1956. . .

GEORGE PARKHURST  
Chairman of the Board  
Oronite Chemical Co.  
San Francisco, Cal.

*We erred. The other "project" at Grangemouth, in which Monsanto, Distillers and Anglo-Iranian have an interest, is Forth Chemicals, Ltd. Product: styrene monomer—ED.*

### For the Record

TO THE EDITOR: I am inspired to write to your excellent magazine by the appearance of the news article "The Dominant Triumvirate," the latest of a series concerned with isocyanate products (Sept. 3, p. 28) [which discussed the polyurethane patent situation].

For the record, I would like to say that Hudson Foam Plastics Corp., a company you described over a year ago as a "dark horse," has been pro-

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to:  
W. A. Jordan, Chemical Week, 330  
W. 42nd St., New York 36, N.Y.



# THE RARE EARTHS

a report by Lindsay, world's largest producer of cerium, rare earth and thorium chemicals

Let's look back billions of years. Far beyond the beginning of history, back to the very formation of the earth. Here the rare earths were created . . . conceived in the raging inferno of a new-born planet.

Down from the high country trickled the streams, joining into rivers, rolling on to the immense seas that covered much of the globe. On the deltas, the rivers deposited their loads of sand . . . some of it *monazite*, the glassy, brown globules that hold the rich treasures of thorium and that peculiar and wonderful chemical clan . . . the rare earths.

This was the beginning . . . this was the formation of the deposits of monazite that are found today in such widely separated locations as the Union of South Africa, India, Brazil and, domestically, certain southeastern and far western states.

\* \* \*

The rare earths are metals, not earths — and they are by no means rare. Together they comprise approximately five thousandths of one per cent of the earth's surface. This group of 15 elements — atomic numbers 57 through 71 — has evolved from a role of interesting chemical oddities to a position of exciting importance in scientific and industrial technology.

Until recently, the rare earths remained virtually untouched by commercial investigation. Many researchers believed them unavailable for large scale use because they were difficult to separate. This is no longer true. Lindsay is refining and separating these unique elements in large volume for commercial use. The rare earths offer a rich field for scientific study and hold significant possibilities for profitable

application in a wide variety of industrial processes.

The use of rare earth-thorium ores was born with the invention of the incandescent gas mantle late in the 19th century. The key element in the manufacture of these mantles was thorium, which is found in conjunction with the rare earths in monazite ores. Interest in elements 57 through 71 was aroused and since then, they have become increasingly important in a wide variety of manufacturing processes.

*Motion picture projectors, lighter flints, alloy steels, ceramic coloring, glass coloring, glass decolorizing, glass, mirror, television picture tube and granite polishing, photosensitive glass, paint driers, sunglasses, nausea preventatives, reagent chemicals . . . these are but a few of the many commercial applications of Lindsay rare earths.*

With the invention of the electric light, the demand for gas mantles dropped sharply, and with it this need for thorium. In 1945, however, interest in thorium again shot upward, for this element holds great promise of becoming important in the development of atomic energy for peacetime use. You see, while thorium alone is not fissionable, it becomes so when combined with small amounts of uranium. Thus reactors, using relatively inexpensive amounts of thorium and uranium can equal the electricity-generating power of thousands of tons of coal. The nation's need for this material has prompted Lindsay to accelerate its search for domestic deposits of monazite ore which is now obtained from the Union of South Africa. As more thorium is extracted from this ore, more rare earths are available for industry.

Rare earth and thorium chemicals have attained new importance through the work of Lindsay scientists who, for 53 years, have pioneered the research and development of these chemical tools for industry. This, coupled with extensive raw material sources, has helped Lindsay develop the world's largest facilities for the production of rare earths. Salts of thorium and rare earths are available for prompt shipment—a gram or a carload.

We have noted a few of the industrial applications of rare earth chemicals. There are others and certainly many more as yet undiscovered. If you are curious about the possibility that rare earths may have useful applications in your industrial processes, or would like more information from us, we welcome your inquiry. Technical data is available and the facilities of our research staff may be helpful to you.

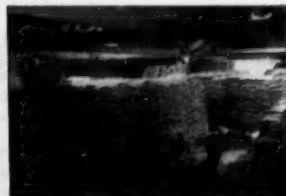
Please address your inquiry to:  
Dr. Howard E. Kremers, *Director of Research*.

**LINDSAY CHEMICAL COMPANY**

270 ANN STREET, WEST CHICAGO, ILL.



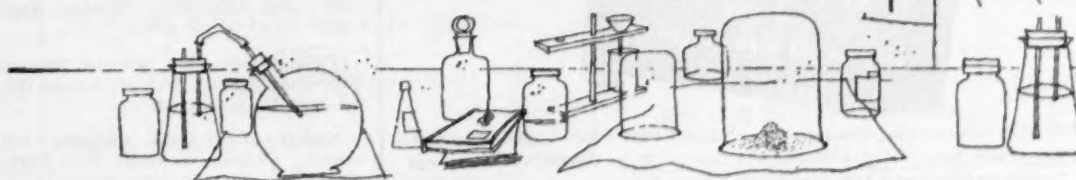
Latest addition to Lindsay monazite processing plant at West Chicago.



Part of 12,000,000 pound stock pile of monazite in Lindsay warehouse.



Small section of filtration floor in new plant addition.

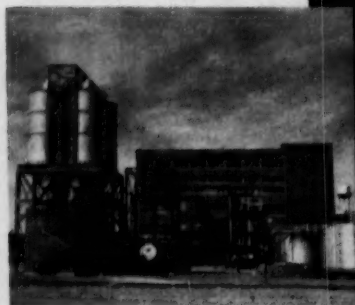


## 12-building chemical plant...



*Canadian Industries (1954) Limited plant, on the shores of Lake Ontario near Kingston, Ont., designed to produce 11 million lbs. of polyester fiber each year.*

*Close-up of part of plant showing elevated D-M-T bins and glycol recovery and storage facilities with polymer building in background.*



designed, built  
and equipped  
on schedule...

by

**Ferguson**

This complex, 10-acre-floor-area plant is an outstanding example of how Ferguson works closely with the men of industry to create better facilities for making better products. Designed in collaboration with Imperial Chemical Industries (1954) Limited, this ultra-modern plant produces "Terylene"—a multi-purpose synthetic polyester fiber widely used in clothing and in household and industrial fabrics.

A mere listing of some of the structures—the 5-story polymer building, analytical laboratory, sewage disposal plant, 5-story spinning building, boiler house—indicates the enormity of the project. Yet Ferguson designed, with I. C. I.'s assistance, and constructed and equipped the entire plant—even completed the landscaping—in just two years.

In like manner, Ferguson's one-contract, one-responsibility service can fulfill your engineering and construction requirements regardless of size. Also, Ferguson can give you more for your expansion dollar. We would welcome the opportunity to show you.

Write for your copy of **LABORATORIES**, which describes Ferguson achievements in designing and building research laboratories for industry.



EXECUTIVE OFFICES: Ferguson Bldg., Cleveland, Phone Tower 1-6400 • NEW YORK: 19 Rector St.  
CHICAGO: 1 N. LaSalle Bldg. • LOS ANGELES: 411 West 5th St. • CINCINNATI: Cooper and  
Wyoming Avenues • SAN FRANCISCO: 55 New Montgomery St.

## OPINION . . . . .

ducing and selling its polyester foam for over two years. Hudson has its own patents, relies entirely on its own knowledge and skill, and licenses from no one. As *Fortune* magazine for March of this year had the fortitude to point out, Hudson's polyester foam is an all-American product.

Surely this is something of which to be justly proud, or are we to infer from the statements published by you and others that there is some superiority in European science not found in America? As an American by adoption, I do not believe this. Ideas are still, thank heaven, the perquisite of individuals, and it is to these individuals that large companies owe their very existence and their continued success. And no huffing and puffing and corporate announcements can disguise poverty in initiative or laggardness in conception . . .

CHRISTOPHER L. WILSON

Technical Director

Hudson Foam Plastics Corp.

Yonkers, N. Y.

Reader Wilson describes his product as a "polyester foam," not as a "polyurethane foam." His reason: the preponderance of linkages are ester linkages, even though the foam does contain some isocyanates. Other major components: a dibasic acid, a glycol.

Ed.

## SEE YOU THERE

**Synthetic Organic Chemical Manufacturers Assn.**, annual dinner, Commodore Hotel, New York, Dec. 1.

**Chemical Specialties Manufacturers' Assn.**, annual meeting, Roosevelt Hotel, New York, Dec. 5-7.

**Chemical Industries Exposition**, Commercial Museum and Convention Hall, Philadelphia, Dec. 5-9.

**Chemical Engineering Award Dinner**, Bellevue-Stratford Hotel, Philadelphia, Dec. 7.

**American Pharmaceutical Manufacturers Assn.**, midyear and eastern section meetings, Waldorf-Astoria Hotel, New York, Dec. 12-14.

**International Atomic Exposition**, Cleveland Public Auditorium, Cleveland, Dec. 12-16.

**Tollet Goods Assn.**, Scientific Section, midwinter meeting, Waldorf-Astoria Hotel, New York, Dec. 14.

**Society of Cosmetic Chemists**, fall meeting, Commodore Hotel, New York, Dec. 15.

## FROM EPOXIDATION TO POLYMERIZATION...

# ALBONE<sup>®</sup> hydrogen peroxide puts a wide range of reactions at your finger tips

**SINGLE-STAGE EPOXIDATION:** Conversion of natural fats and oils to a variety of useful derivatives has been simplified by a new epoxidation technique recently developed by Du Pont. In a one-step reaction, peracid is formed *in situ* and used in the presence of the material to be epoxidized. Efficiency is high.

Other advantages for the new resin technique include higher epoxy content; lower by-product formation; easy adaptation to give desired type of product; easier recovery of epoxidized oils; safer operation.

### ORGANIC AND INORGANIC

**OXIDATIONS:** Under proper conditions, "Albone" oxidizes ferrous iron to ferric iron, nitrites to nitrates, sulfides and sulfites to sulfates, halogen acids to the corresponding halogens (except fluorine), and alcohols and aldehydes to the organic acids.

**ADDITION:** Under certain conditions, "Albone" hydrogen peroxide adds on to ethylenic hydrocarbons to form glycols. With many inorganic oxides and hydroxides, it forms the corresponding peroxides. Most hydrate-forming salts produce perhydrates. Organic chlorides form organic peroxides.

**POLYMERIZATION:** Using hydrogen peroxide as a polymerization catalyst, resins and plastics can be produced from acrylic and vinyl esters, and diene hydrocarbons can be condensed.

Du Pont's long experience in the manufacture and use of "Albone" hydrogen peroxide is at your disposal. If you use hydrogen peroxide now—or if you're planning a product or process in which this versatile chemical can play a part—feel free to consult us.



**ALBONE<sup>®</sup>**  
**HYDROGEN PEROXIDE**

Prompt Delivery in Drums and Tank Cars



BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY

Du Pont will be glad to help you improve your products and processes involving hydrogen peroxide. For prompt advice on your specific application or idea, just write to:

E. I. du Pont de Nemours & Company (Inc.), Electrochemicals Department, Peroxygen Products Div., CW-1112, Wilmington 98, Delaware.



**SULFURIC ACID**

**60°**

**SULFURIC ACID**

**66°**

**SULFURIC ACID**

**98%**

**SULFURIC ACID**

**99%**

## **Productions from Cornwell**

**ACIDS FOR EVERY BASIC  
INDUSTRIAL PROCESS**

**SULFURIC ACID**

**100%**

**ELECTROLYTE AND  
DRY CHARGE**

**OLEUM**

**10%**

**OLEUM**

**20%**

**OLEUM**

**25%**

**OLEUM**

**65%**

**NITRIC ACID**

**36°**

**NITRIC ACID**

**38°**

**NITRIC ACID**

**40°**

**NITRIC ACID**

**42°**

**PHENOL  
SULFONIC ACID**



**CORNWELL CHEMICAL CORPORATION**

EXECUTIVE OFFICES... 24 East 38th St., New York 16. MUrray Hill 3-0174

SALES OFFICES... Cornwells Heights, Pa. (Philadelphia)

Cornwells 0700—ORchard 3-2088

744 Broad Street, Newark, N. J. MAket 4-2776

**MURIATIC ACID**

**20°**

**MURIATIC ACID**

**22°**

**INHIBITED  
ACIDS**



# Business

## Newsletter

CHEMICAL WEEK  
NOVEMBER 12, 1955

Almost unnoticed in the pre-Thanksgiving rush of record sales and lush profits is the bitter war of words shaping up this week between leading rubber companies. Cause of all the sniping: a statement by one of the former operators of a government-owned synthetic rubber plant claiming that it had developed a synthetic rubber with the molecular structure of natural rubber "a long, long time ago."

Competitive rubber-producing firms (backed by government investigators) point out that all research and development on synthetic rubber during the period when the government owned the facilities were supposed to have been common property of all firms concerned in the program.

If, therefore, one (or more) of the companies admits to having held out information, the problem could prove to be a sticky federal dilemma.

One repercussion of the government's decision to deny fast tax write-offs on any more aluminum projects is a reappraisal of plans by St. Joseph Lead Co. and Pittsburgh Consolidation Coal Co. to build an \$80-million plant and power station at Josephtown, Pa.

Detailed engineering studies of the project are now being completed; officials of both companies want to know precise operating and construction costs before going ahead.

Directors of Fansteel Metallurgical Corp. have authorized a tantalum-columbium expansion program estimated to cost over \$1 million. Construction starts immediately; completion is scheduled for late in 1956.

What's being regarded in mining circles as one of the greatest gambles in history is a salt plug, capped with rock, lying beneath 25 ft. of water three miles off Galveston—in the Gulf of Mexico.

Already, according to Texas State officials, Texas Gulf Sulphur Co. has poured more than \$7 million into state coffers for sulfur rights on the dome, has not, however, even core-drilled in the area. It's perfectly possible, admits one geologist, that the company's total investment may shoot past the \$10-million mark before anyone is absolutely certain that the caprock of the dome really contains sulfur.

Signed, sealed and finalized this week is an agreement between Chile's largest pharmaceutical maker (the Sociedad Laboratorios) and American Cyanamid Co. Under terms of the accord, the Chilean firm gets an interest-free loan of equipment (valued at \$100,000) from Cyanamid, also receives patent rights to produce Cyanamid's broad-spectrum antibiotics, Aureomycin and Achromycin.

Lederle will send technicians to Chile to help train Chilean personnel in manufacturing techniques, will supply prime raw materials to its Chilean partner.

Executives of the Arkansas Farmers Union still think their state has better than a 50-50 chance of getting the multimillion-dollar fertilizer plant currently planned for the Georgiana, Ala., area.

Officials of Resources Corp. (the National Farmers Union subsidiary designated to operate the proposed plant) refuse to comment on any switch in plant site location, admit, however, that if it is to be in operation

## Business Newsletter

(Continued)

for the 1957 fertilizer year, some decision on the matter will have to be made before Jan. 1, '56.

**On the books for construction on the Pacific Coast** is another nitrous oxide plant—this time at Berkeley, Calif. Making the move: Ohio Chemical Pacific Co., a division of Air Reduction Co. Cost of the project: an estimated \$500,000; completion date: April '57; initial capacity: 70 million gal. of liquefied nitrous oxide annually.

**Behind the scenes** in the forthcoming Judiciary subcommittee hearings in Washington on vested alien properties is a report (from German trade sources) that "a leading West German chemical trade association has retained a well-known U. S. law firm" to work for return of the seized properties. Neither the association nor the law firm will confirm the report; neither, however, will deny that it expects to be very much present when the hearings open on Nov. 29.

**Copper**—with finds touching off the biggest staking rush ever recorded in the La Ronge area of Saskatchewan—has displaced uranium as the "fever metal" in Canada today. Mining recorders say that staking is heaviest in the Drinking-Keg-Trade area—some 50 miles east of the La Ronge settlement. Over 1,000 claims have been registered there within the past month.

**Speculation is rampant in West Virginia** over rumors that Olin Mathieson Chemical Corp. will pick a local site as home of its long-contemplated aluminum plant. Due to make its decision public within the next 30 days, Olin Mathieson is reported to be favoring an industrial location in the Frazier's Bottom section of Putnam County—not far from where Kaiser Aluminum is currently building its new aluminum mill at Ravenswood.

Reason for the desirability of Putnam County: the direct Kanawha River link with nearby Fayette and Kanawha County coal mines.

**Sidney Roofing & Paper Co., Ltd.** (Victoria, B.C.) has decided to build a \$5-million paper products mill somewhere in the greater Vancouver area. Several locations are currently under consideration by company officials—including a 55-acre site in Burnaby, now owned by the Canadian National Railway.

**A number of large** lumber companies (including Weyerhaeuser Timber, Diamond Match, and Georgia-Pacific Plywood) are breathing more comfortably this week—thanks to a cumbersome 15-volume report recently released by the U. S. Forest Service.

The report shows a surplus (for the first time in U. S. history) of annual timber growth (14.2 billion cu. ft.) over annual cut and mortality rate (10.7 billion cu. ft.).

**Rubber paving**, designed to eliminate the rattle and jolt from railroad crossings, is getting its first commercial tryout at West Salem, O.

Railroad officials claim that the rubber crossing reduces maintenance costs, provides a smooth, cushioned surface for motorists.



*Manufacturing plants are shown on black, warehousing facilities are shown on gray*

# HERCULES SIZE ON YOUR DOORSTEP

Hercules' manufacturing and warehousing facilities for paper-making chemicals are strategically located in all papermaking areas. This insures a dependable supply and prompt delivery service, two of many important reasons why paper mills use Pexol® as well as other Hercules papermaking chemicals. No matter where your plant is located, the nationwide distribution of Hercules manufacturing facilities places a stockpile of papermaking chemicals practically in your own back yard.

Behind these quality products, available from many shipping points, there is Hercules' forty-plus years of research and technical service experience in solving many paper-making problems.

More and more mills are recognizing the advantages of a dependable source of supply for quality products backed by research and application know-how.

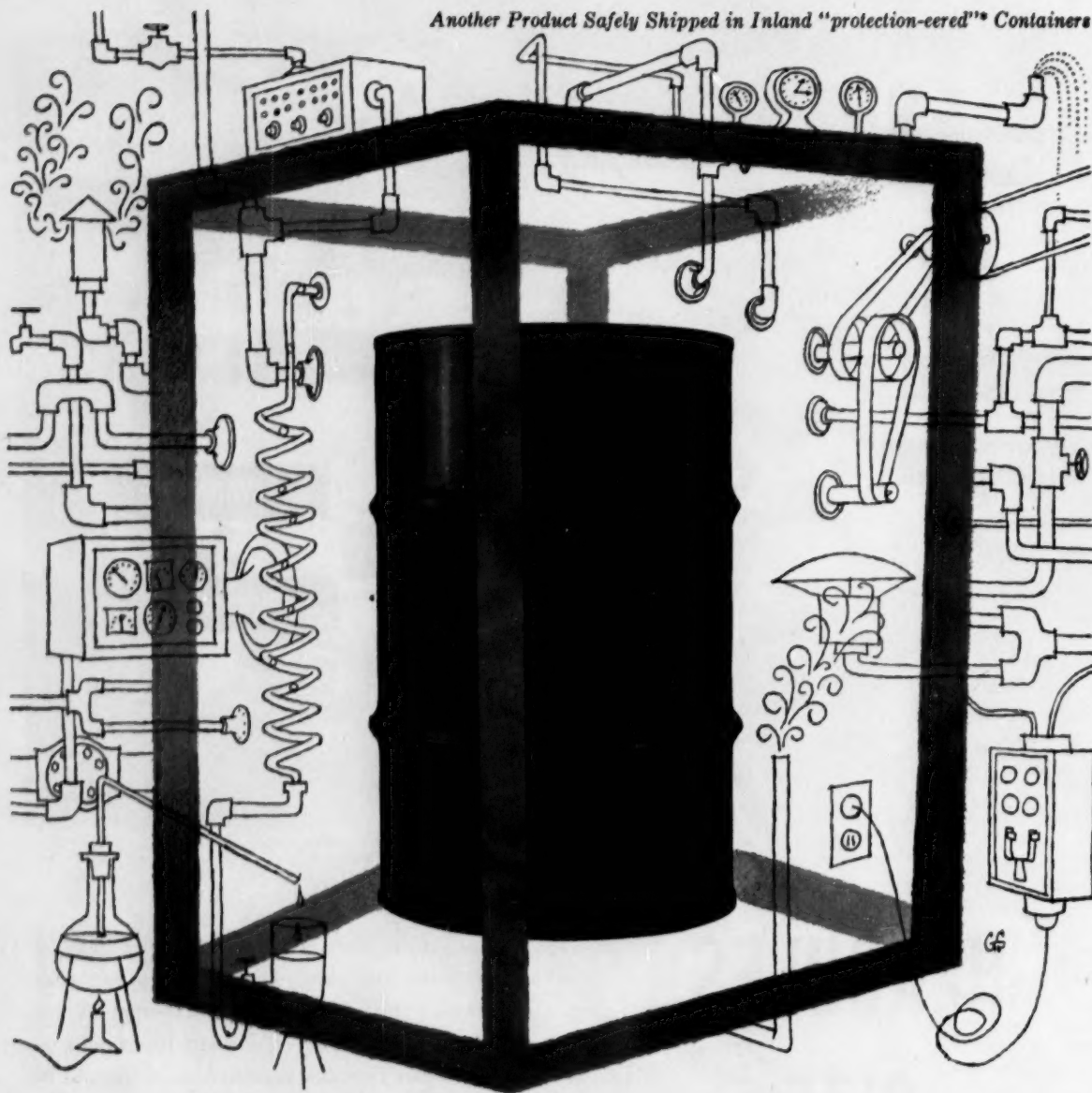
*Paper Makers Chemical Department*  
**HERCULES POWDER COMPANY**

INCORPORATED  
992 Market Street, Wilmington 99, Del.





Another Product Safely Shipped in Inland "protection-eered" Containers



### INLAND drums pass the **"HOT BOX"** test!

Not many users of lined steel containers put them through a more rigid test than does the Woburn Chemical Corp., Kearny, N. J., pioneers in the development and production of colorless specification fatty acids for use in such products as synthetic resins, soaps, cosmetics, rubber and synthetic detergents.

Woburn requires a lined drum that will hold their acids under extreme temperatures for a sustained period of time. Performance is tested by filling the drum with cocoanut fatty acids (acid number of 300), sealing it and placing it in the "hot box," a steam bath where temperatures of about

120 degrees are maintained. After 2 or 3 days the drum is removed and stored for about three weeks. It is then cut open and examined for lining failure, discoloration or contamination of product.

Inland's steel drums, with a special lining tailor-made for the job, pass the severe hot box test every time. The Woburn people know they can depend on Inland "protection-eered" drums to maintain their high standards of product quality during shipment and storage.

An Inland Steel Container representative will be happy to discuss your packaging problems with you.

*\*the right container, with the right lining for your product.*



Write Mr. Robert Boecher, Room 235-A  
INLAND STEEL CONTAINER COMPANY  
Division of Inland Steel Company  
6532 South Menard Avenue • Chicago 38, Illinois  
Plants: Chicago • Jersey City • New Orleans



## BUSINESS &amp; INDUSTRY . . . .



PROF. HUMPHREY: Even if U.S. industry is nipped a bit, he advocates . . .

## Lower Tariffs for Security

That U.S. chemical companies' generally high-tariff sentiments may be contrary to their own best interests is suggested in a 546-page report—out this week—intended by its sponsors to be a definitive reference work on tariffs and international trade for congressmen, businessmen and educators.

This report—urging freer trade as a means of strengthening resistance against communism, even if some segments of U.S. industry may be slightly injured in the process—is being issued by the Twentieth Century Fund (New York) and the National Planning Assn. (Washington), and was written by Economics Professor Don Humphrey of Duke University (Durham, N.C.).

Humphrey's background in tariffs and trade includes a four-year hitch as deputy director for economics on the U.S. military government staff in Berlin (1945-'48), when he negotiated West Germany's first postwar trade agreements.

He's scheduled to testify this week before a joint Congressional economic subcommittee on proposed changes in

the escape clause. (He favors giving the President authority to disregard Tariff Commission findings on injury to domestic producers when this is deemed to be in the national interest; but believes that when this happens, the industry concerned should be allowed time to adjust its operations.)

**Reappraisal Asked:** Based on a five-year study financed by the Twentieth Century Fund, the report—entitled "American Imports"—includes these proposals drawn up by NPA's Committee on International Policy:

- That U.S. tariff rates be lowered, with specific recommendations to come from a top-level, interdepartmental committee that would make a thorough reappraisal of existing tariff structure.
- That the President be given additional power to cut tariffs; that the "peril point" amendment be repealed and the "escape clause" modified.
- That readjustment aid be made available by federal, state, and local governments for industries and communities hurt by increased imports.

This massive report—covering

nearly a century of U.S. trade-and-tariff history from the Civil War to the present—attempts to answer such questions as the extent to which tariff policy has been responsible for the dollar gap, which U.S. industries are dependent on tariffs for survival, and how further tariff cuts would affect (a) imports, (b) the over-all economy and (c) particular industries.

**Profit Seen in Switch:** As to chemicals, Humphrey concedes that "the national interest probably dictates that domestic capacity be maintained to meet the bulk of our requirements." But there's still plenty of room to increase imports, he asserts, noting that the U.S. exports three or four times more chemicals than it imports, and that imports are less than 1% of domestic production.

"An enlightened view of the national interest," Humphrey suggests, "might allow imports of the basic chemicals as large as 10 to 15% of consumption. On the assumption that the margin of profit is relatively low on these products, the industry itself might find it more profitable to concentrate production on the newer products where profit margins are higher. If put to the test, home industry might—because of integrated production—meet foreign competition to the extent of holding imports to less than 10% of consumption."

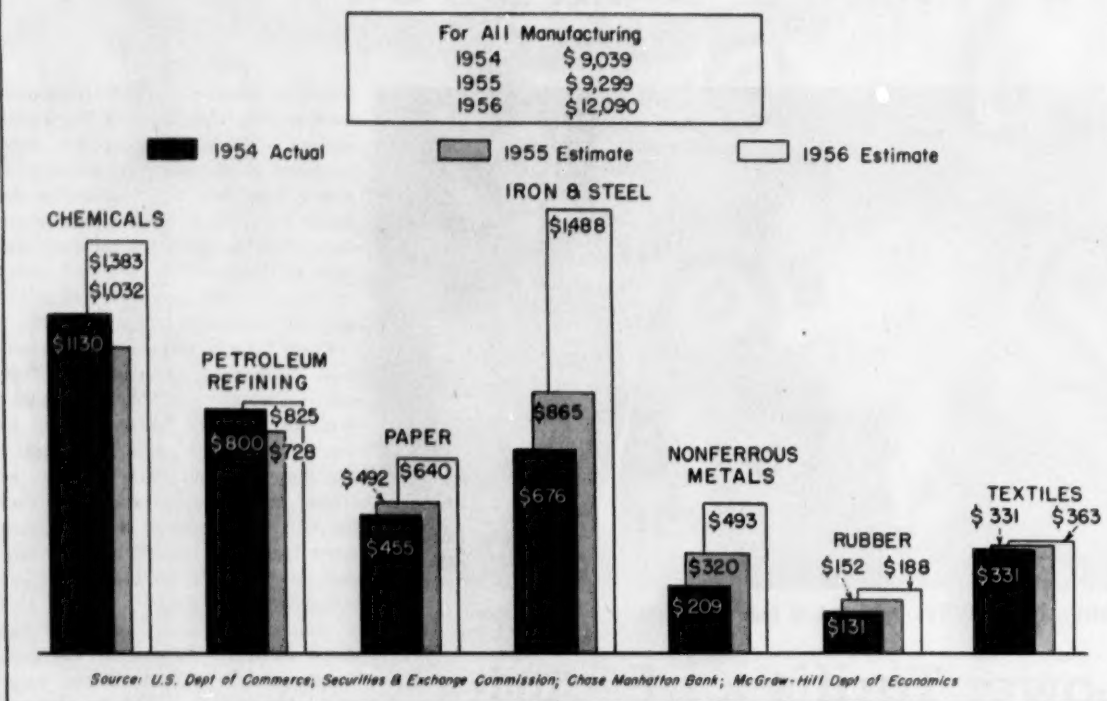
He chides the industry's support of the American Tariff League, holding that "the broad interest of the chemical industry lies in freer trade." His conclusion: "Freer trade would produce no flood of chemical imports. If profits of the chemical companies were shaded a trifle, no real damage to the national interest would result."

Humphrey tells *CW* he doesn't take issue with the industry's stand that any trimming of chemical tariffs be on a selective basis. But, he insists, we shouldn't be so selective that there's no increase in imports.

That's how far Humphrey goes along with the chemical industry. But how far the chemical industry will go along with him is another question.

## CAPITAL SPENDING OF U.S. MANUFACTURING FIRMS CONTINUES TO RISE

In millions of dollars



## Spending Plans: Gaining Momentum Fast

Leading the pack, in what economists are predicting will be a repeat performance of the 1951-1953 buildup of manufacturing capacity, the chemical industry now purposes to lift production facilities some 34% in 1956, as compared with this year's growth.

In every line of manufacturing (according to a late October survey\* compiled by the McGraw-Hill Dept. of Economics), companies are planning higher expenditures next year. Expansion, in fact, is paralleling very closely the same lines that added so much capacity during the Korean war boom.

But almost nowhere is the purposed expansion as bullish as in the chemical processing industries.

**Business In General:** In general, the survey points out, U.S. business

\* A preliminary survey of business plans, conducted in the last three weeks of October, well after first word of President Eisenhower's heart attack.

now plans to spend 13% more for new plants and equipment in 1956 than in 1955. This is the largest general increase in planned capacity spending since 1951 (\$33.4 billion in 1956; \$29.4 billion in 1955; and \$29.2 billion in 1953).

Making the picture even more arresting: the increase now predicted by management for chemical process firms is general, extends from one sector of the industry to the other. For example:

- The steel and nonferrous industries added (in the early 50's) what was thought to be a large amount of reserve capacity. Their expenditures in 1954 and 1955 have been at reduced levels; but now these same companies are planning new and large increases in spending—72% for steel producers, 54% for the nonferrous industry.

- Chemical and petroleum refining industries, which also contributed

heavily to the 1951-1953 Korean buildup and which slackened expansion plans in 1954-1955, also plan to boost expenditures sharply in 1956.

Reason given by most companies (in each of these general categories) is that capacity today is tight. The expansion of civilian demand has been greater than the old defense requirements; and further large-scale increases are expected in the near future.

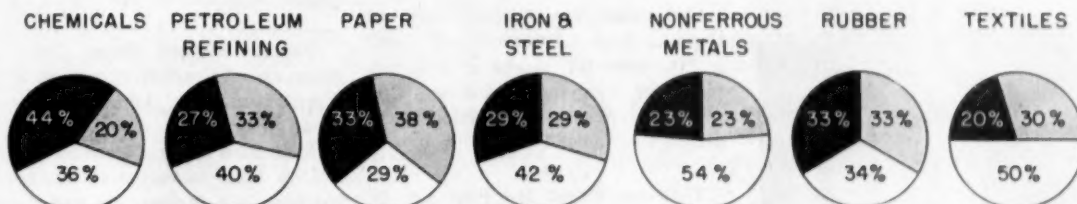
**Looking Ahead:** Against perennial skeptics, who think the boom is just a passing fancy, the survey offers grounds for even more basic argument.

Over half of all companies surveyed now say they expect to spend at least as much for expansion in 1957 as in 1956.

And in the chemical industries, at least half of all reporting firms say they plan to up expansion spending in 1957.

## HOW COMPANIES PRELIMINARY INVESTMENT PLANS SHAPE UP FOR 1957 \*

Investments will be up
  Investments will be down
  Investments will remain



\* Compared with 1956

The strength expressed in such predictions is especially striking when one stops to consider the large increase scheduled for expansion in 1956. Plans itemized by chemical executives, moreover, are tentative at this time. And in the past, the tendency has been for the average company to add to its advance plans as the target date nears.

**Sales to Rise:** In the light of such extravagant expansion planning, it's no surprise that chemical companies are predicting a sales rise in 1956.

But it's interesting to note that the manufacturing industry now planning the largest increase in capital expansion (namely iron and steel) expects its 1956 sales to rise less than the average of all manufacturing (viz., 5% as against 7%).

Capital spending plans, therefore, are obviously meant to anticipate sales beyond 1956; executives have come to realize that sales expectations can not be raised without prior substantial additions to manufacturing capacity.

**Tip-off to Vigor:** A final tip-off to just how bullish chemical executives are—for the immediate years ahead—is the confidence currently manifested by planned expansion of basic chemical-producing facilities.

Weakening demand for key industrial chemicals (e.g., sulfuric acid, chlorine) has often in the past been a prelude to a general decline in manufacturing activity. Conversely, strong buying of such chemicals generally reflects good inventory turnover—the sign of good business ahead.

Today, chemical executives maintain, demand for industrial chemicals has rarely been equaled. One reason, they assert, is that users of such materials today are so widely diversified that weakness in one market is offset by strength in another.

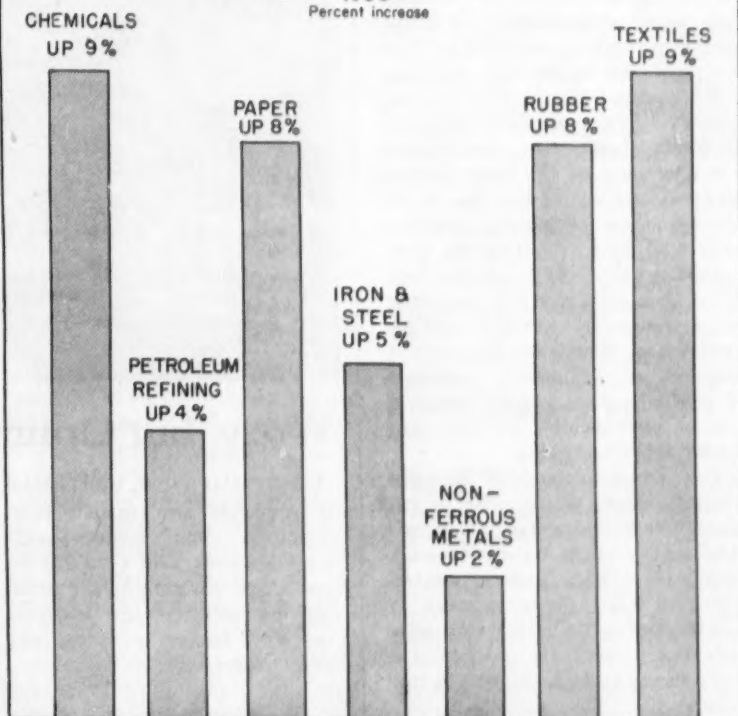
But more important: business today

is rooted in healthy conditions.

"The industry," states one president flatly, "is headed into an era of almost unparalleled growth. What we've seen so far is only an indication of what's ahead. And executives today are just beginning to realize what's in store for them."

## SALES EXPECTATIONS FOR 1956

Percent increase







ESA'S AMANN: To recruit more members, he prescribes speechmaking.

## Salary plus Overtime

Should professional, salaried employees be paid on a "time-and-one-half" basis for overtime work?

Yes, indeed, say engineers and chemists at the Standard Oil refinery in Whiting, Ind. Through their collective bargaining organization—Research & Engineering Professional Employees Assn.—they've turned a cold shoulder on management's offer of straight-time pay or compensatory time off for voluntary overtime work put in since the plant was damaged by explosion and fire several months ago.

Now, REPEA members are going to decide whether they want to take a strong stand on the issue. They're going to vote on the question of refraining from voluntary overtime work until the matter is settled.

**Flirting with ESA:** In another indication that they feel their problems call for labor union tactics, REPEA members are inviting the Engineers & Scientists of America—a federation of professional bargaining units—to send a representative to address a special REPEA meeting.

This is sure to suit ESA President Joseph Amann, who's eager to tell prospective members about his organization. At a recent one-day training institute for ESA leaders, Amann called on local officers to speak at college meetings to build better relations with students. He also told of a salary survey to be made by ESA this winter.

## EXPANSION

**Isobacetic Acid:** U.S. Industrial Chemicals Div., National Distillers Products Corp., New York, will build an isobacetic acid plant at Tuscola, Ill. Initial production: 10 million lbs./year; completion is scheduled for early in 1957.

**Ammonia:** The Girdler Corp. of Canada, Ltd. (Toronto) will build a 200 tons/day synthetic ammonia plant for Canadian Industries, Ltd. at Millhaven, Ont. Completion is expected for mid-1956.

**Cellulose Film:** Du Pont Co. of Canada will start work immediately on a \$1 million expansion of cellophane cellulose film making facilities at Shawinigan Falls, Que. The program is the third major expansion step undertaken by Du Pont in 1955.

**Plastic Foam:** Dow Chemical Co. will start work soon on two new

plants to produce Styrofoam—a Dow plastic foam.

One plant will be located near Ironton, O. (on the Ohio River)—will be known as the Hanging Rock plant; the other will be built at Riverside, Missouri (on the Mississippi)—will be known as the Riverside Plant.

Completion in both cases is expected sometime in the fall of 1956.

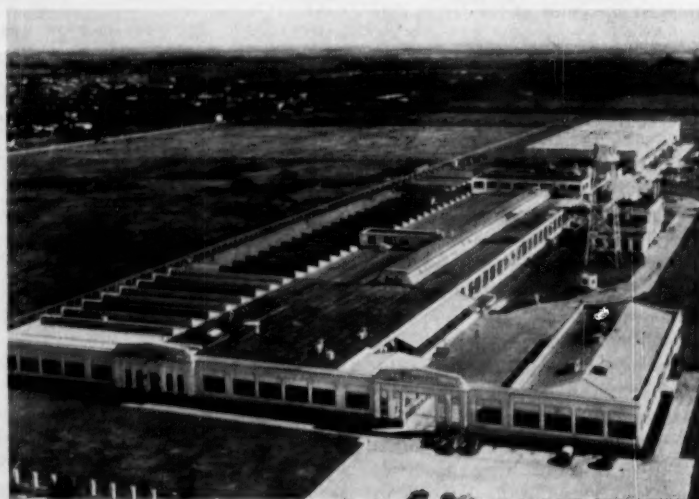
**Paper:** Bowater Paper Corp. is planning a \$5 million expansion at its Corner Brook, St. Johns, Newfoundland, paper mill.

Main item in the expansion will be a 25% boost in output of one paper machine and increase in power-generating units.

Immediate target: a mill output of 1,100 tons of paper, 160 tons of sulfite pulp.

**Rosin:** Hercules Powder Co. will expand its rosin plant at Savannah, Ga., at a cost of \$4.5 million.

Construction work gets under way



## Wary, but Optimistic

U.S. COMPANIES with interests in Argentina are generally more optimistic about business conditions this week, with word that the provisional government has devalued its currency and instituted sweeping foreign exchange and trade reform.

To companies like Firestone (see cut), this reform will mean that all profits earned in Argentina after June 30, 1955, can be converted into dollars, may signal the future possibility of conversion of large accumulations of earnings piled up before that date.

## Washington Angles »

» **Montan wax from East Germany** and Czechoslovakia has been dumped in the U.S. at less than full value. So says the Treasury Dept., following complaint by the sole domestic producer, American Lignite Products Co., Lone, Calif. The Tariff Commission, as a result of the charge, has sent out a letter asking whether a formal hearing should be held.

If Tariff finds injury to industry, Treasury can then assess a duty to make up the difference between the dumped price and a fair one.

» **New proposals for amending alcohol tax laws** have been advocated by a special survey committee for the Internal Revenue Service. Among them: exemption from rectification tax for manufacturers who recover spirits from products that do not meet maker's standards; modification of draw-back regulations for medicinal use to allow such rebates not only where tax has been paid but also where it merely has been determined; proposal that permits for tax-free use of spirits be issued on a permanent basis unless revoked, rather than on an annual basis.

Treasury Dept. will press these changes before Congress next year.

» **A water policy report is due by year's end** from the Cabinet committee on water resources. White House staffers are now giving a going-over in preparation for its release. Administration policy on water use, water development, water pollution and the like will be spelled out.

» **Current trends in asbestos production and use** are covered in a new report by the Bureau of Mines. The U.S. leads the world in manufacturing asbestos products, ranging from automobile brakes to laminated plastics.

» **Industrial sugar users** attacked the Dept. of Agriculture at hearings being held prior to fixing the import quota for next year. They contend the Dept., in fixing the quota, is thinking only of domestic producers, not industrial users or individual consumers. They suggest that the quota next year be at least 8.7 million tons, compared with 8.5 million tons used for the year ending Oct. 31, 1955. This is 200,000 tons over previous peak consumption for the period.

» **Activated carbon imports are harming U.S. producers.** That was the word given to government tariff negotiators last week by Pittsburgh Coke & Chemical's Jonathan Cooper. Cooper asks the Committee on Reciprocity Information not to offer to cut the carbon tariff by the 15% specified in reciprocal trade laws.

immediately, is expected to be completed sometime late in 1956.

• **Sulfur:** Montana Sulphur and Chemical Co. will build a sulfur-producing plant at Billings, Mont., scheduled for completion early next year.

Hydrogen sulfide gases—from both Carter Oil and Continental Oil Co. refineries—will be used as the company's source of raw material.

• **Cement:** Missouri Portland Cement Co. is expanding capacity at its North St. Louis plant to 5 million bbls./year. Completion is expected next summer.

• **Sodium Hypophosphite:** Victor Chemical Works plans to build a new plant to produce sodium hypophosphite in Nashville, Tenn. Completion is scheduled for Feb. '56.

• **Synthetic Resins:** Haskell Chemical Co. will build a new plant at Dumfries, Va., to produce synthetic resins. Cost: \$70,000; estimated completion date: fall 1956.

## COMPANIES. . . .

**Plans for Diamond Black Leaf Co.,** Cleveland, to take over operation of the Des Moines (Iowa) pesticide processing plant of the Geigy Agricultural Div., Geigy Chemical Corp. (New York), were being finalized this week.

Built in the fall of 1954 at a cost of \$500,000 (and put into operation earlier this year), the Des Moines plant produces insecticides and herbicides for sale throughout the plains states.

Diamond Black Leaf Co. was formed last February, absorbing the Black Leaf operations formerly owned by Virginia-Carolina Chemical Corp., Richmond, Va.

Reason for the move on Geigy's part is reportedly an attempt to intensify its activities in the DDT and methoxychlor-producing fields, and expand production of ag chemicals.

• **Stockholders of the Zonite Corp.** have approved a change in the firm's name to the Chemway Corp. Also

agreed upon: a corporate reorganization into four separate functioning divisions: the Zonite Div., for proprietary drugs; the Larvex Div., for household products; Crookes Laboratories, for ethical pharmaceuticals; the Lady Esther Div., for cosmetics.

• **Cornelius Products Co., Inc.,** and G. S. Ziegler & Co. have merged their wax-producing facilities into a single operation—the Cornelius Wax Refining Div., G. S. Ziegler. Cornelius Products is basically an importer, refiner and wax blender; Ziegler is a producer of gilsonite and fatty acid derivatives.

• **Chase Chemical Corp.** has purchased the Pruett-Schaffer Chemical Co. (Pittsburgh, Pa.).

• **Procter & Gamble Co.** has consolidated all functions of two of its subsidiaries—the Buckeye Cotton Oil Co., and the Buckeye Cellulose Corp. Reason given: overlapping functions of the two subsidiaries.

# IN STEARATES, A SPECK OF DIRT THIS BIG



...could render  
less than perfect  
Pierre's  
Sauce Matelotte\*

Stearates, you know, are often used in onion and garlic salt, to prevent caking under humid conditions.

Which is just an added reason we strive so hard—and so successfully—to keep Metasap Stearates absolutely pure. These Stearates are also used in many things—from baby powders and cosmetics to plastics, greases, paints—where even a few tiny specks of foreign matter would be too many for the performance and the reputation of your product.

Therefore, our reasoning is simple: "If we screen out those impurities, you are spared the trouble." At Metasap we use the most thoroughgoing series of fine screens, magnetic traps, and filters to be found in the industry. (We even filter the air.) These in addition to rigid quality control and the use of equipment which virtually rules out the chance of impurities in the first place.

For Stearates of supreme uniformity and quality, come to Metasap. Our technical service department will gladly advise and assist you.

\*Recipe upon request.

Send for  
our informative  
**FREE** book,  
"Metallic Soaps For  
Research and Industry"



**METASAP CHEMICAL COMPANY**  
HARRISON, NEW JERSEY

Chicago, Ill. • Boston, Mass.  
Cedartown, Ga. • Richmond, Calif.

**the cleanest stearates made**



## Some industries served by Metasap

**PAINT** makers solve pigment suspension problems with Metasap Stearates, producing primers and sanding sealers that have excellent filling qualities.

**LACQUER AND VARNISH** makers use Metasap Stearates to assure efficient flatting, and to obtain better finishes.

**PLASTICS** molders use Metasap Calcium, Zinc, and Barium Stearates to improve internal lubrication, which assures superior preforms, better finished products, and longer mold life.

**RUBBER** processors use Metasap Zinc and Magnesium Stearates to lubricate molds and prevent uncured stock from sticking.

**LUBRICANTS**—Grease makers use Metasap Stearates because these outstanding soaps afford a wide range of quality bases that help producers to meet any grease specifications.

**PAPER**, Textiles, Cosmetics, Food Processing, and many other industries call upon Metasap Stearates to perform important services.



# ANNOUNCING

## A NEW SOURCE OF SUPPLY FOR

# CAUSTIC POTASH

GAF's modern caustic potash plant is scheduled for production in January, 1956, at Linden, N. J.

Through the mercury cell process, the utmost in quality will be available in both the Standard and Low Chloride Grades.

Completion of this plant will mark the

entry of GAF in the field of heavy chemicals. The same high caliber of technical and manufacturing know-how that made the company foremost in the fields of dyestuffs and surfactants will be employed in the production of caustic potash. Your inquiries will be welcomed.

ANTARA



*From Research to Reality*

**ANTARA CHEMICALS**

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

SALES OFFICES: New York • Boston • Providence • Philadelphia • Charlotte • Chattanooga • Chicago  
Portland, Ore. • San Francisco • Los Angeles. IN CANADA: Chemical Developments of Canada, Ltd., Montreal

## CHEMICAL COMPANY EARNINGS

(000 omitted)

	SALES			NET AFTER TAXES		
	Three Quarters 1955	Three Quarters 1954	% Change	Three Quarters 1955	Three Quarters 1954	% Change
Abbott Laboratories.....	\$70,943	\$67,690	4.8	\$7,722	\$6,899	11.9
Air Reduction.....	109,534	91,046	20.3	8,354	4,789	74.5
Atlas Powder.....	45,160	43,093	4.8	2,558	1,880	36.1
American Ag.*.....	57,438	56,756	1.2	3,744	4,002	-6.5
American Potash.....	20,355	17,955	13.4	2,852	1,785	59.8
Consolidated Chem.....	26,505	23,079	14.9	3,244	2,776	16.8
Diamond Alkali.....	82,888	70,989	16.8	6,256	4,478	39.6
Freeport Sulphur.....	—	—	—	9,309	7,524	19.2
Heyden.....	18,052	12,898	39.9	1,091	569	47.8
Internat. Min.*.....	73,135	72,797	0.5	3,457	4,388	-21.2
Merck.....	117,845	109,465	7.7	12,320	9,444	30.5
Monsanto.....	307,679	252,636	21.8	23,582	16,636	41.9
National Distillers.....	—	—	—	10,814	9,656	12.0
National Lead.....	390,004	310,817	25.2	34,208	25,776	32.6
Nopco.....	17,272	15,852	9.0	1,081	987	9.5
Parke, Davis.....	90,219	80,569	12.1	9,528	7,052	6.8
Pennsalt.....	51,470	44,391	15.9	2,663	2,664	0.0
Chas. Pfizer.....	119,871	108,610	10.4	11,456	11,311	1.3
Procter & Gamble.....	—	—	—	17,318	18,915	-8.4
Rayonier.....	105,677	63,003	67.8	12,241	8,716	40.5
Schering Corp.....	33,086	14,542	126.0	4,789	1,114	332.0
Spencer*.....	29,672	26,405	12.4	4,116	3,812	8.0
Stauffer.....	79,704	64,174	24.2	6,475	4,508	43.6
Sun Chem.....	31,563	31,201	1.2	1,290	1,122	15.0
Texas Gulf Sulphur.....	—	—	—	24,167	23,384	3.4
Victor.....	35,410	32,556	5.7	2,780	2,841	-2.1

\* Fiscal year ends June 30.

## From Any Angle: A Spectacular Display

On the basis of three quarters' earnings, virtually all chemical process companies are sure to set record highs for '55.

Putting the final cherry on the cake, business in the fourth quarter may outreach all comparable quarters in terms of both sales and net profits.

Sales of chemical and allied products should pass the \$23-billion mark by the end of the year, and sail into 1956 on the crest of a wave of prosperity never before equaled.

That's the conviction of chemical companies this week—now that the majority of three quarters' earnings reports are in.

Where fall-offs have occurred (chiefly among fertilizer-producing companies), the cause is attributed to a particular, isolated condition—a prolonged labor dispute or drought.

Most companies, on the other hand, state that gains have been in virtually all lines of business—from increased demand for basic chemicals to rising sales of specialties chemicals.

Making the industry's position even more promising in the months ahead:

sales gains this year reflect greater volume—not price rises.

Inventories haven't changed much over the past nine months (see p. 39); most chemical makers say that demand has been picking up almost in direct proportion to capacity increases—except in very exceptional cases.

**Unanimous Response:** Typical of the type of reports going out from company executives to stockholders this week is a statement by Louis Ware, president of International Minerals & Chemicals.

"All of our diversified businesses," says Ware, "are in a growth stage."

Other firms, in anticipating fourth-quarter sales scores, are looking forward to certain gains from plants that have come on-stream since summer. Such, for example, is the case

of American Potash, which will see American Lithium Chemicals' \$6.6-million plant at San Antonio, Tex., in which it has a 50% interest, come on-stream later this month. Also in this general category: Spencer Chemical, which expects its new polyethylene-making units to start showing a profit soon.

General confidence is forthcoming from all pharmaceutical firms, also. Typical is Schering, which, after several years of struggling to break even, shows a 126% sales increase for the first nine months of 1955, and a 332% gain in net profits. The greatest part of this almost-fantastic leap, Schering officials are quick to point out, resulted from the sale of Meticorten and Meticortelone—released earlier this year. But other Schering products are gaining, too: third-quarter sales of noncorticosteroid drugs are up approximately 20%.

With such testimony, there's little cause to question the health of the chemical process industries.

# Worries Still Nettle

Despite record three-quarter earnings, chemical executives are concerned over soft spots that might cause trouble in 1956.

It's true, they admit, that much of their fretting may be needless. On the other hand, some of the signs could signal danger.

Like seafarers scanning the horizon for the first sign of a blow, chemical executives this week are searching economic forecasts for indication of trouble ahead. The search, most of them admit, isn't especially alarming; for the most part business is so good that it is overshadowing other problems.

Nevertheless, some problems do exist. And mindful of the stakes involved, management is determined to do what it can to avert trouble—before it assumes major importance.

**"Labor is getting restless again. We're bound to feel the pressure after the first of the year . . ."**

On top of the worry list, in most sections of the country, is the "probable aggressive attitude of unions in 1956."

"It's almost axiomatic," points out one Midwest chemical vice-president in response to a *CW* survey, "that with bigger, stronger unions, we're going to run headlong into tougher bargaining." Already in some sections of the country, management says it is getting wind of more resolute demands by unions after the first of the year.

"No one knows," says one New England chemical maker, "just how stiff the situation will get; but everyone here expects a rough-and-tumble battle with unions in '56."

From the South: a similar impression—that the labor picture will prove to be one of the new year's biggest headaches (see p. 34).

**"Political overtones . . . in an election year . . . will temper business somewhat . . ."**

Also well up on the list of probable problem makers is the rapidly deteriorating political situation in Washington.

"If it comes to a gloves-off scramble for votes next year, the chemical in-

dustry is bound to suffer," states a West Coast company president. "Each party will be trying to pin irregularities on the other; the immediate effect will be a weakening of business confidence . . . a tendency on the part of executives to hold back to see which way the political winds will blow."

"The current stigma surrounding former industry representatives in BDSA is an excellent example of the kind of thing we'll be facing next year," complains one New York vice-president. "Digging up past records, and attempting to use them as part of a political campaign, is a badly worn dirt-slinging weapon—of both parties. But it's sure to wash back on all of us next year."

**"Pollution control is getting to be a very hot issue."**

"Pollution is our most serious worry here today," maintains a Texas company representative. "We're currently taking extraordinary precautions—for fear that the situation in Houston (see p. 28) will cause trouble here."

"There's yet no sure way to beat the pollution problem," agrees a California company executive. "It's a serious headache to any company with major plants in community areas—and is apt to become more exaggerated next year. The reason is simple: more people, a growing health-consciousness, and stricter state laws."

In the South, there's another problem—causing much soul searching on the part of chemical management today. "The colored-white problem has blossomed overnight into our biggest single concern," frankly admits a Texas company vice-president. "We're all afraid of such incidents as the one that occurred in Waco a fortnight ago (*CW*, Nov. 5, p. 36), when a Negro was given a particular job because he was better qualified than a white man. The result was a wildcat, sit-down strike on the part of white union

members—and the immediate alerting of virtually all unions in the area."

"Such an incident," agrees another Texas industry representative, "could act as the spark, setting off a whole series of similar incidents. Our company, with headquarters in the East, is perfectly willing to accord equal rights and opportunities to all men—regardless of color. But it's not that simple . . . when you're living in the South."

"It's going to take some careful handling for the next several months on the part of all chemical firms with plants south of the Mason-Dixon line."

**"We're watching farm income here. What the Administration does in the next few weeks will condition business in '57."**

Reaction from farm belt chemical executives on their major worry today is almost unanimous. "Farm income . . . which has slipped badly this year . . . is our biggest concern," says one company president. "Next year, most government-aided fertilizer plants will be in full operation, but it doesn't look now as though the farmer will have enough ready cash to buy up the full quota."

Insecticide and herbicide producers are likewise concerned over slumping farm incomes. "We're hoping," states one, "that the government will really step in . . . But that will be, at best, only a temporary respite. Overseas sales are the only real way to avoid an almost certain surplus of farm chemicals in 1956."

**"Competition is getting stiffer. Companies outside the chemical industry are getting into the act . . ."**

Money for expansion is mentioned by many small companies as a growing worry; fear of tariff-slashing and foreign competition is indicated by others as a "situation to watch."

But by and large, most chemical men acknowledge that such worries are heavily outweighed by the vibrant health of business in general.

"We're all worriers," concludes one company board member. "Almost by force of habit, executives today search for a dark cloud, forgetting it's only a single cloud in a very blue sky."



## Recent Developments Indicate that Government Attempt to Protect U.S. Industry Has Gone Underground

- "Buy American" policy is being reappraised to see whether foreign bidders on U.S. contracts can be excluded on defense grounds.
- Protecting "unique skills" from foreign competition is being probed.
- Exclusion of foreign bids under foreign aid programs is being considered.
- Special protection on defense grounds for certain industries (under the new Trade Agreements Act) is being studied.

## Muffled but Militant

The struggle over President Eisenhower's freer foreign trade policy has moved out of the spotlight of Congressional debate, but it is still being waged fiercely behind the scenes within the Administration itself.

Four studies of basic aspects of foreign trade policy are now being made, will do much to set the pattern of foreign competition for domestic industry—including parts of the chemical industry—in the months ahead.

Probable outcome, as of now, is some increased protection from foreign competition, particularly in bidding on government contracts. Two of the four current government attempts to protect U.S. firms are aimed at reappraising the "Buy American" policy—under which domestic bidders on government contracts are given certain preferences over foreign bidders.

A special interagency committee is seeking to determine whether it would be feasible to exclude foreign firms in advance from bidding on government contracts where there is reason to believe foreign bids would be rejected anyway on defense grounds. The study was sparked by machine tool builders, alarmed by the more liberal "Buy American" standards set up by the President last year.\*

But the study will go far beyond special problems of particular indus-

tries, will try instead to establish a general policy for the prior exclusion of foreign bidders on government contracts where defense is involved.

**No Easy Solution:** A lot of tugging and hauling is sure to go on within the committee before any conclusion is reached, however. Knotty policy problems include the following:

- Very few industries are so vulnerable to foreign competition and so critically essential to defense that it is possible to say certainly in advance that the national defense would be impaired if they lost government contracts to foreign bidders.
- Exclusion in advance of foreign bidding on government contracts could, in some cases, lead to submission of much higher bids from domestic concerns relieved of foreign competition.
- Over the long run, there would be danger of stagnation in industries completely protected from foreign competition.

In the light of such problems, the upshot of the committee study is likely to be a general recommendation giving agency heads a freer hand to exclude foreign bids on government contracts on defense grounds. But it is too early to predict just what this will mean, in practice, for any given industry.

**Other Possibilities:** Another proposal for tightening up the "Buy American" policy is being studied by Joseph Dodge's Council on Foreign Economic Relations. This is a proposal

by Secretary of Commerce Sinclair Weeks to exclude foreign firms from bidding for business under foreign aid programs, on the grounds that U.S. industry should get the benefit of the taxpayer's dollar. Its principle, if accepted, would logically lead to a total ban on foreign bidding on any government contracts. Again, though, a compromise is likely, which will make it harder for foreign firms to get business under aid programs without completely excluding them.

A third intergovernmental committee set up under the Office of Defense Mobilization is studying the question of protecting "unique skills" in U.S. industry from damaging foreign competition, either through tariff protection, government subsidy or some other means.

Meanwhile, ODM is wrestling with the problem of applying the defense clause of the new Trade Agreements Act to a number of industries seeking special protection on defense grounds. Theoretically, any industry that is important to national defense could apply for relief from foreign competition under this procedure. Just what protection might be granted is difficult to predict, however. The law merely empowers the President to take such action as he deems necessary if he finds that imports in a given field are threatening the national security.

So far, the law hasn't been tested in practice, and an early test is unlikely for several reasons. There is some doubt about the constitutionality of the provision since the delegation of Congressional authority is so broad. Equally important: it is difficult in practice to define how a given volume of imports of a given commodity hurts national defense, and equally difficult to devise effective measures to counter such a threat without violating U.S. international treaty obligations.

But two main conclusions emerge clearly from this welter of Administration studies of foreign trade policy. First, defense essentiality is becoming as important as the old concept of "injury from imports" in determining the eligibility of an industry for special protection against foreign competition. And second, the half-measures now being considered to give additional protection to domestic firms threatened by foreign competition are likely to hurt U.S. foreign relations more than they aid business.

\* Price preferences (for domestic firms) were cut from 25% to 6%, thereby putting foreign toolmakers at a competitive level with U.S. firms for U.S. government contracts.

these

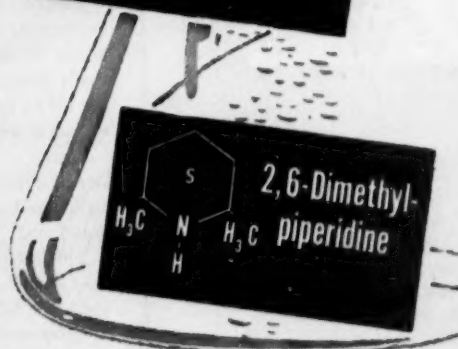
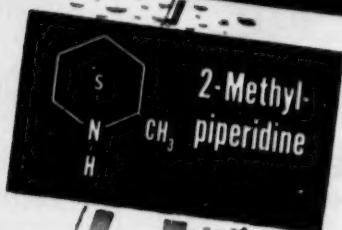
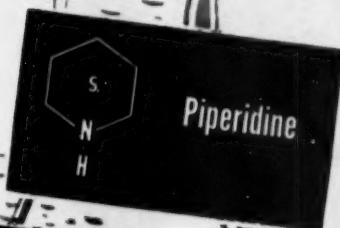
high purity

compounds

are

REILLY

Piperidines



Send for your copy of  
Reilly Chemical Index, 2nd Edition.

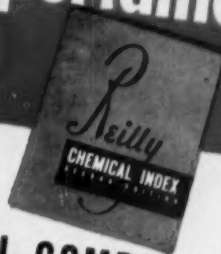
REILLY TAR & CHEMICAL COMPANY

1615 MERCHANTS BANK BUILDING, INDIANAPOLIS 4, INDIANA

HETEROCHEMICALS

COAL TAR CHEMICALS

ACETYLENE DERIVATIVES



## Profitable ideas in Dust Control...



Air pollution is one of industry's biggest and most costly problems. Clouds of dust, fumes or smoke pouring out of a plant jeopardize company good will, undermine community relations and often waste valuable materials. Then, too, they encourage the adoption of punitive control legislation.

Eliminating air pollution is usually not an inexpensive matter, but by working with Dracco many firms have realized dividends of cash and good will. A large eastern smelter, for example, halted air pollution and neighbors' complaints by controlling zinc oxide fumes with a Dracco Dust Recovery system. New profits are also being gained from selling materials formerly lost to the sky.

If air pollution is your problem, why risk bad publicity or lost profits? Have Dracco study your operation and show you how to convert your problem to profits. Why not call or write today?

**DRACCO CORPORATION**  
4080 East 116th Street • Cleveland 5, Ohio

in  
bulk materials  
handling  
and  
dust control



Dracco has prepared a 40-page brochure on "Industrial Dust Control and Recovery". We will be happy to send you a copy on request.

**dracco**  
converts problems to profits

B & I . . . . .



**McGEE:** In test case on air pollution, he may broaden suit to cover . . .

### Dozens of Defendants

Rambling along in an eighth-floor courtroom of the Harris County courthouse at Houston, Tex., is a civil suit that's likely to set precedents all over the lot on an issue that's vital for many chemical process companies:

Under what circumstances can a city or county get an injunction against an alleged violator of local air pollution laws?

This is the suit of Harris County vs. Consolidated Chemical Industries, and the hearing is being conducted by Houston attorney W. Sears McGee, former state district judge who has been appointed by the court to serve as a special master in chancery for this case.

The county accuses Consolidated of contaminating the air around its plant at nearby Manchester, and both sides have agreed to let the master in chancery decide whether an injunction should be issued.

McGee—armed with authority to recommend that other plants in the area also be named as defendants—is reportedly considering proposing about 24 other firms' inclusion "for protection of their own rights, or to make it possible to rectify any existing pollution." So far, this hearing—which might go on for several months—has centered on a broad study of how pollution is caused and what methods of abatement are available. Representatives of various concerns are attending the sessions.



*new!*

**POLYCO 296-W** acrylic thickener  
a colorless, odorless  
aqueous solution  
containing 15% solids

Here's the acrylic thickener that is ideal . . . easier to incorporate in paints, paper coatings, textile sizes and finishes, adhesives and scores of other products. No master batching . . . minimum cost to obtain desired viscosity increase . . . maximum viscosity stability . . . exceptional compatibility that increases shelf life. For easy, low cost viscosity control of formulations based on natural rubber latex, Buna N, GRS and Butadiene/Styrene latices, Acrylic, Polyvinyl Acetate and other synthetic resin emulsions, investigate the advantages of POLYCO 296-W. Write to the address below for samples and additional technical information.



TYPICAL THICKENING EFFECT OF 296-W

Product	% Added	Original Viscosity	Final Viscosity
Butadiene Styrene Paint A	½%	64 KU	69 KU
Butadiene Styrene Paint B	1%	68 KU	83 KU
Natural Rubber Latex	3%	175 cps	3750 cps
GRS X 446	3%	125 cps	7600 cps
Nitrile Rubber Latex	3%	75 cps	6000 cps
Acrylic Emulsion	3%	50 cps	1425 cps
Polyvinyl Acetate	3%	1100 cps	4550 cps

POLYCO DEPARTMENT

THE *Borden* COMPANY  
CHEMICAL DIVISION

101 FOSTER ST., PEABODY, MASS.



for  
inform  
brief summary of  
helpful product ne

## Giant glass-lined reactor proves advantages of fire-resistant Aroclor 1248 heat-transfer fluid

### Monsanto heat-transfer medium specified

The Argus Chemical Company, Brooklyn, N. Y., has installed a giant reactor to produce heat and light stabilizers for vinyl chloride plastic. The system utilizes Aroclor\* 1248, Monsanto's fire-resistant, liquid-phase, heat-transfer fluid.

The 3500-gallon, glass-lined kettle—largest of its kind in the United States—has an automatic, pressureless system which operates at temperatures up to 550° F.

With Aroclor 1248 used for both heating and cooling operations, there is maximum protection against the type of fire hazard inherent in other systems. Aroclor 1248 is designed for operation at atmospheric pressure; it has a boiling point sufficiently above 600° F. to maintain a liquid condition at all times. The material possesses viscosities which permit pumping at room temperatures.

### Aroclor 1248 offers important advantages

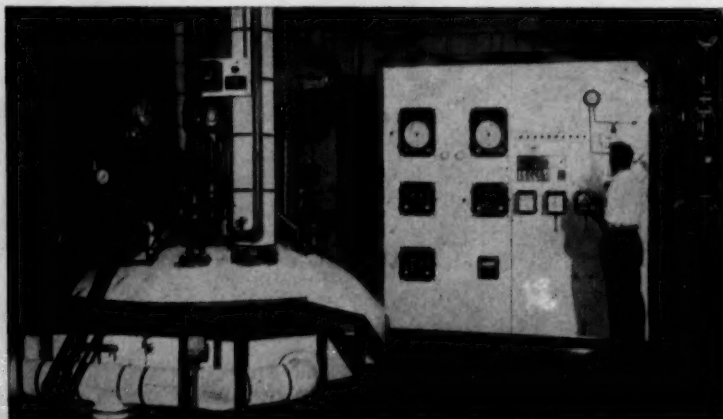
As a fire-resistant, heat-transfer medium, Aroclor 1248, a chlorinated

biphenyl, offers chemical processors these critical benefits:

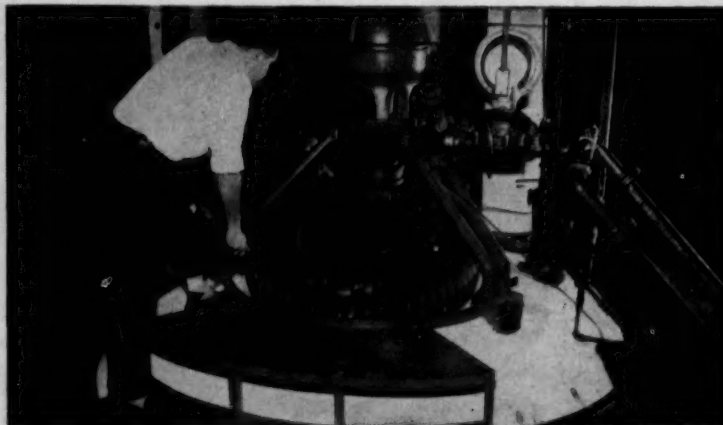
- Stability against heat.
- An adequate safety margin to accommodate accidental overheating.
- Reduced corrosive action.
- Controlled vaporization loss.
- Freedom from toxicity hazard in properly enclosed systems.

### Send for informative bulletin today

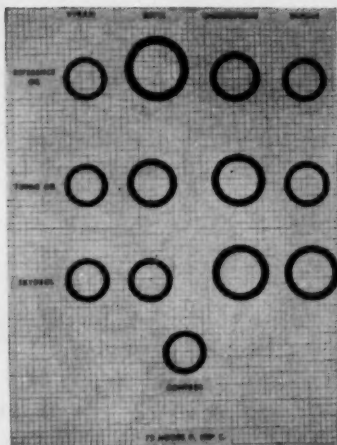
For more information about Aroclor 1248 as a heat-transfer fluid, write for Monsanto's Technical Bulletin No. O-P-130. This bulletin describes the physical properties of Aroclor 1248 and illustrates the design and operation of typical heaters.



Upper level of reactor with panel board for thermal system in background.



Specially designed glass-lined kettle has 3500 gallon capacity.



Vyram O-rings (vertical column, far left) show no signs of swell or distortion even after prolonged immersion tests.

## New elastomer highly resistant to hydraulic fluids and many solvents

Monsanto's Vyram\* is a remarkable synthetic elastomer which resists the swelling action of both synthetic and petroleum-base hydraulic fluids and lubricants.

Proved by extensive tests, Vyram has demonstrated its ability to withstand the chemical action of a variety of solvents and other fluids.

Comprehensive immersion data on Vyram in alcohols, aldehydes, amines, esters, ether, glycols, hydrocarbons, ketones, oils, substituted hydrocarbons and functional fluids are presented in a new technical bulletin just issued on Vyram.

Also included in the bulletin are physical properties, compounding data, processing information and a summary of properties imparted by various curative systems.

If you manufacture elastomeric seals, Vyram may be just the material you've been looking for. For technical information, check the coupon and mail today.

## New bulletin on insect killer Methyl Parathion available

One of the industry's most effective insecticides, Monsanto's Methyl Parathion, offers formulators an important addition to their line.

Described in detail in a bulletin just issued are these facts about Methyl Parathion: product characteristics and features, registrations for use (at USDA and state levels), precautions for handling, and important formulation information.

Order your copy today.

## Latest information on bulk tank storage of plasticizers ready

Production people handling plasticizers will find important information in Monsanto's newly revised, 16-page bulletin, "The Bulk Tank Storage of Plasticizers."

Topics covered in this illustrated bulletin: materials of construction particularly useful in setting up bulk tank storage units, storage tanks, pipe lines, pumps and filters, tank car and truck unloading, safety precautions, etc.

Write Monsanto for your copy.

## More coatings and adhesives uses forecast for Santolite MHP

Santolite MHP gives specialized properties to adhesives and coating formulators using cellulose, polyamides and most vinyl resins.

A water-white sulfonamide-formaldehyde condensation resin, Santolite MHP is widely used to give polyvinyl acetate adhesives quick tack. Usually compounded with a liquid plasticizer like Santicizer 160, dibutyl phthalate or with a mixture of these plasticizers and triphenyl phosphate, it forms a tough but flexible adhesive for bonding cellophane to cellophane, aluminum foil to paper.

In coatings such as nitrocellulose lacquers, Santolite MHP is used extensively for a greater degree of clarity, gloss, heat sealability, oil- and moisture-resistance.

Because of its wide range of compatibility and its strong solvent power, Santolite MHP is a standard component for use with cellulose acetate to increase that resin's retentivity for other plasticizers and resins.

Let us send you more information about Santolite MHP and its companion resin, Santolite MS-80%. Just check coupon.

\*Reg. U. S. Pat. Off.



WHERE CREATIVE CHEMISTRY WORKS WONDERS FOR YOU

MONSANTO CHEMICAL COMPANY  
806 North 12th Street, St. Louis 1, Mo.

11/12/55

Please send me the items checked below:

☐ Arador 1248 Heat Transfer Fluid,  
Tech. Bul. No. O-P-130.

☐ Vyram Synthetic Elastomer,  
Tech. Bul. No. ODB-55-21

☐ Methyl Parathion, Tech. Bul. No. O-55

☐ The Bulk Tank Storage of Plasticizers  
Tech. Bul. No. O-69

☐ Santolite MHP and MS-80%,  
Tech. Bul. No. O-94

Name..... Title.....

Company.....

Street.....

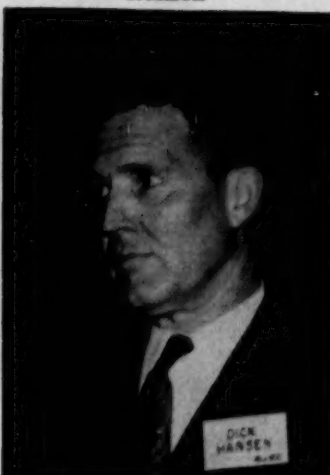
City..... Zone..... State.....



Crichley



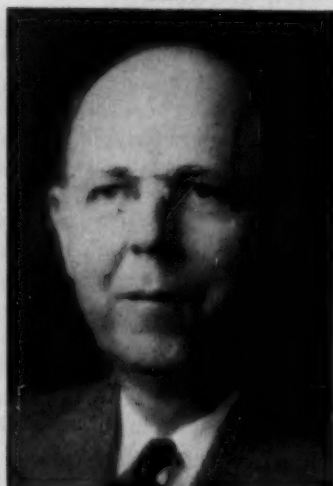
Hansen



O'Connell



Gillet



## In 'Industry Wheelhorse' Roles

Who's carrying the work load for the Manufacturing Chemists' Assn. this fall and winter?

Among the industry's wheel horses in double harness—for their companies and for the industry's mutual aid organization—are these men serving as chairmen of various MCA committees. With current committee assignments completed last month, a 1956 "Who's Who in the MCA" would include:

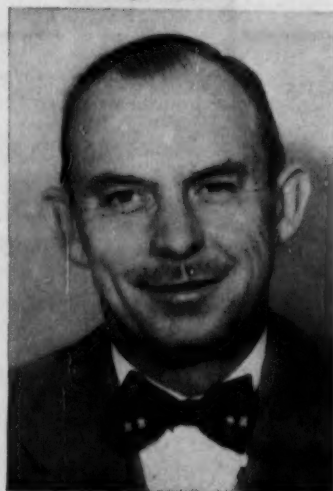
W. A. Crichley, Diamond Alkali, tax policy committee; Richard Hansen, Allied Chemical & Dye, international trade and tariff; F. J. O'Connell, Allied, industrial relations; J.M.

Gillet, Victor Chemical, chemicals in foods; H. L. Jacobs, Du Pont, water pollution abatement; Walker Penfield, Pennsylvania Salt Mfg., air pollution abatement; S. M. MacCutcheon, Dow Chemical, general safety.

Others recently selected by the MCA board of directors as heads of advisory committees: Joseph Fistere, Mallinckrodt Chemical, finance; Hans Stauffer, Stauffer Chemical, program; Emery Cleaves, Celanese, public relations; O. V. Tracy, Enjay Co., statistical.

Inquiries to any committee may be mailed to MCA's Washington headquarters.

Jacobs



Penfield



MacCutcheon





A chemical property of molybdenum helps make the Ford Thunderbird's Fiesta Red finish. Molybdenum orange brings warmth, brilliance and long service to car owners everywhere.

## Moly modifies crystal structures

Lead molybdate in small quantities changes the crystal structure of lead chromate to a new form with unusual properties. The mixed crystal is known as molybdenum orange. This brilliant pigment has a deep reddish orange hue, great hiding power, and high tinting strength.

Can you improve the crystal structures of your materials by incorporating a molybdate or one of the other molybdenum salts? Write Department 28 for our bulletin, "Molybdenum Chemicals."

**CLIMAX MOLYBDENUM CO.**

500 Fifth Avenue, New York 36, N. Y.

*Use the moly key  
to creative chemistry*



- catalyzes • chelates
- oxidizes • polymerizes
- precipitates • reduces
- solubilizes



**DIRECT DEALING PREFERRED:** At Florida nylon plant and Texas organics plant, Southern workers voice . . .

## Faith in Chemical Firms

**It's not just a 20th century legend.** That Southern wage earners really have a friendlier, more personal attitude toward management than do workers in other parts of the U.S. is a phenomenon observed this week and every week by chemical process companies with plants in Dixie.

*CW's* recapitulation of recent bargaining elections conducted by the National Labor Relations Board at chemical process plants (see p. 36) shows that while only 10.9% of the workers voting in the North and West wanted to deal directly with management, nearly two-thirds—specifically, 64%—of the Southern workers were in favor of bypassing labor unions.

Despite those lopsided figures, most Southern manufacturers expect that their plants will be fairly extensively organized within the next five years. This view is supported by the fact that, by picking the plums that seemed ripest for unionizing, the unions were able to win 9 out of 14 elections at Southern plants during the three-month period, even though over-all voting was heavily anti-union.

**The Reasons Why:** The survey prompts the question: Why do so many Southern workers prefer to put their trust in chemical management rather than in labor unions? To probe for answers, *CW* talked to employees, union organizers and management men involved in two elections that

turned out to be decisive setbacks for unions. One was at Chemstrand's nylon plant in Pensacola, Fla.; the other at the ethylene chemicals plant of Allied Chemical & Dye's Nitrogen Div. at Orange, Tex.

Balloting at the Allied plant was the fourth representation election to be held in the "chemical row" of plants at Orange; and in all four elections unions were rejected.

"We've got it pretty good here without a union," a 28-year-old mechanic told *CW*, and the union people haven't shown us where they can make things any better." A 25-year-old operator said the workmen had talked about "going union" because of dissatisfaction with sick leave benefits. But "we finally decided to stay unorganized and appoint a committee" to talk to the plant manager. Most of the workers at this plant had helped build the plant, and an estimated 20% of them still carry cards in AFL construction unions.

**Pleased by Comparison:** At Pensacola, AFL organizer Kenneth Scott blames his defeat on two factors:

- Pensacola is a low-wage community; and by comparison, the Chemstrand employees feel they are fairly well paid.

- Foremen were pulling workers off the job for "brain-washing" sessions prior to the election.

Both at Pensacola and at Orange,

the AFL says it will keep right on trying. Scott feels that the new minimum wage law will spark organizing in the South.

The forthcoming AFL-CIO merger also can be expected to bring stepped-up organizing drives throughout the country, and it's known that the chemical industry will be one of the primary targets. But with such serious defeats as those at Pensacola and Orange to live down, it's obvious that in the South, anyway, the unions still have a long way to go—and current management strategy is "to keep one jump ahead" of the unions on wages and other benefits.

See table on p. 36

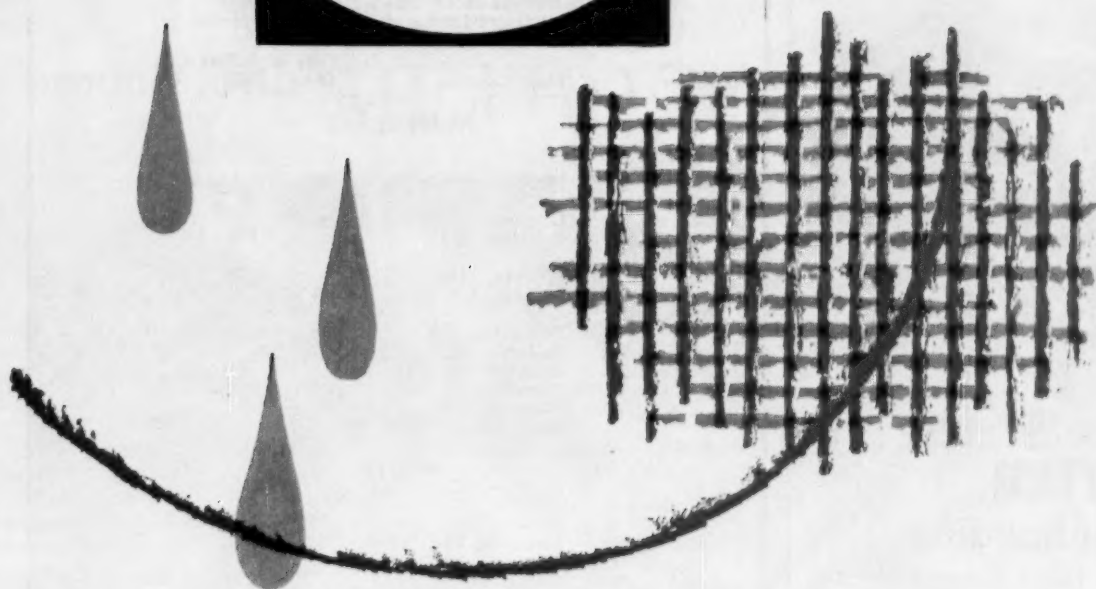


**AFL'S SCOTT:** To win big bargaining group, he'll try, try again.



spotlight on

oxidation stability  
in oleic acid



*how Emersol Elaine  
eliminated uneven dyeing fault  
of a fiber lubricant*

If you have a problem involving a "breakdown" or "change" in your products induced by aging or oxidation, then this customer experience will be of interest: *Case History No. 27-31 . . . The difficulties of uneven dyeing of yarns and fabrics in a textile mill precipitated a thorough investigation of all variables. The trouble was traced to this manufacturer's fiber lubricant which oxidized on the yarns. This led to only partial "oil" removal in scouring, which left sufficient residue to prevent uniform penetration of the dye.*

*Since oleic acid was a constituent in this manufacturer's lubricant, a study of oxidation stabilities of double-distilled oleic acids from different producers was undertaken. Laboratory results showed that Emersol 221 White Elaine exhibited superior oxidation stability,*

*and when substituted in his regular production, eliminated all previous dyeing difficulties.*

This experience serves only as an example of the benefits derived from the outstanding oxidation stability of Emersol Oleic Acids. When this is added to their excellent color stability and resistance to rancidity, you get an unmatched combination that will make your products better, more appealing, and stay that way longer . . . and all at no extra cost. So, if you are not already benefiting from the Emersol Elaines, buy your next, and all oleic acid requirements from Emery.

Write Dept. I-11 for 20 page brochure titled "Emersol Oleic Acids."

**Look for us at the Chemical Show  
Philadelphia, December 5-9**

 **Emery**

**Fatty Acids & Derivatives  
Phthalate Plasticizers  
Twitchell Oils, Emulsifiers**

**Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio**

*New York; Philadelphia; Lowell, Mass.; Chicago; San Francisco; Cleveland; Eccles Chemical Co., Detroit*

*Warehouse stocks also in St. Louis, Buffalo, Baltimore, and Los Angeles*

*Export: Carew Tower, Cincinnati 2, Ohio*

## Fire! But this building didn't burn



Just before this photo was taken, this Butler building was wrapped in flames from an adjoining fire.

## it's a fire-safe **BUTLER** steel building

Time and again, fire-safe Butler steel buildings have earned an unexpected bonus for their owners. In roaring infernos, they have shielded their contents—with only a few dollars worth of damage to easily replaceable covering panels. They have contained interior fires, leaving surrounding inflammable buildings untouched.

If fire strikes your present buildings—rebuild with Butler. Half finished at the factory—they are bolt-assembled in less than half the usual erection time. Besides being fire-safe, there are many more important Butler construction features that save you important money. Learn the whole story... send coupon today.



Manufacturers of Oil Equipment  
Steel Buildings • Farm Equipment  
Dry Cleaners Equipment • Special Products

Factories at  
Kansas City, Mo. • Galesburg, Ill. • Minneapolis, Minn.  
Richmond, Calif. • Birmingham, Ala. • Houston, Texas

For prompt reply address office nearest you:

### **BUTLER MANUFACTURING CO.**

7459 E. 13th Street, Kansas City 26, Mo.  
989 Sixth Avenue, S.E., Minneapolis 14, Minn.  
1659 Avenue W, Ensley, Birmingham, Ala.  
Dept. 89, Richmond, Calif.

Please mail more information on  
Butler steel buildings.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

## BUSINESS & INDUSTRY . . . . .

Continued from p. 34

Chemical labor unions find . . .

### HARDER SELLING IN THE SOUTH

(Results of recent representation elections  
conducted by NLRB at chemical process plants)

Company	Plant Location	Tally of AFL	Ballots CIO	Cast Ind.	No Union
<b>NORTHEAST</b>					
Air Reduction Sales	Pittsburgh	63		2	1
American Cyanamid	Gloucester City, N.J.	65		127	0
Celanese Consolidated Chem.	Belvidere, N.J.		171		4
Geigy Chemical	Woburn, Mass.		96		2
Givaudan-Delawanna	Bayonne, N.J.	25			10
Hood Chemical	Delawanna, N.J.	8	0		0
Interchemical	Fullerton, Pa.	10			0
Koppers	Bound Brook, N.J.		74		12
Linde Air	Kearny, N.J.	4/0			0
Vitro Mfg.	Tonawanda, N.Y.			7	20
	Pittsburgh	5		20	0

### **SOUTH**

Allied Chem. & Dye	Orange, Tex.	5	8		61
Chemstrand	Pensacola, Fla.	563			2,296
Columbia-Southern	Corpus Christi, Tex.		222	169	0
Gulf Salt	Houston, Tex.	11			21
Kaiser Aluminum	Baton Rouge, La.	29			40
Merck	Elkton, Va.	3	46		28
Midwest Carbon	Pryor, Okla.	24			14
National Cylinder Gas.	Ft. Smith, Ark.		3		0
F. S. Royster	Norfolk, Va.	52		31	0
Stebbins & Roberts	Little Rock, Ark.		7		16
Texas City Chemicals	Texas City, Tex.	45	42		0
Thiokol Chemical	Karnack, Tex.	76*			11
Virginia-Carolina Chem.	Norfolk, Va.	12		16	1
Weaver Fertilizer	Norfolk, Va.	31		10	0

### **MIDWEST**

Corn Products	Pekin, Ill.	225	657		0
Du Pont	Fort Madison, Ia.			1	4
Inter-Coastal Paint	East St. Louis, Ill.	0		44	0
Kosmos Portland Cement	Louisville, Ky.; Cincinnati	124			188
National Cylinder Gas	Lima, O.	2			0
Purex	St. Louis	77/23			0
Solventol Chemical Products	Detroit	22			0

### **WEST**

American Smelting & Ref.	Grand Junction, Colo.	10			4
General Electric	Idaho Falls, Ida.	29	3		63
Int. Min. & Chem.	Carlsbad, N.M.	72/62			0
Potash Co. of America	Carlsbad, N.M.	207	230		0
Western Electrochem.	Henderson, Nev.	40/4**	3		0

\* Four bargaining units; tallies consolidated.

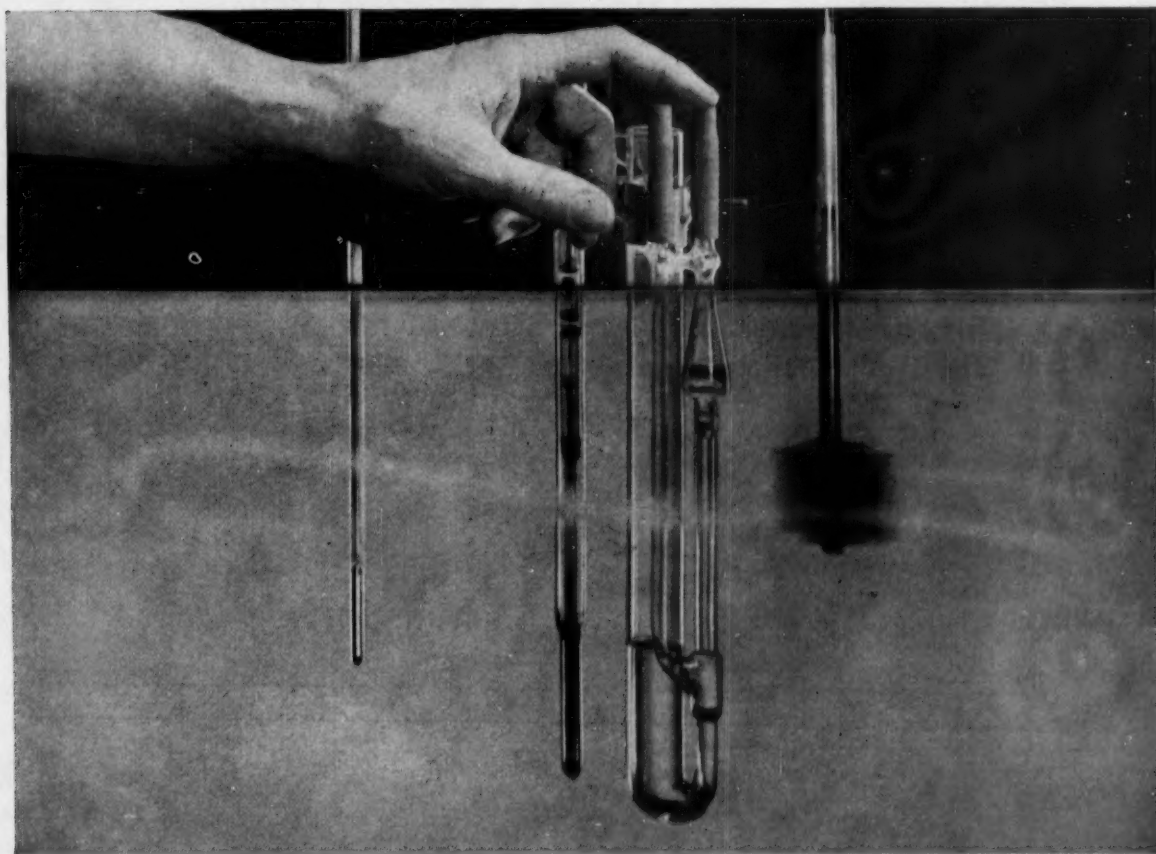
\*\* Two bargaining units; tallies consolidated.

# viscosity control



... starting point for improved products

maintain uniform viscosity in your  
product with **METHOCEL** a synthetic gum



Measuring viscosity of solutions of Methocel in the Ubbelohde Viscosimeter.

Uniformity is important in the material you choose for the vital job of viscosity control. To assure complete uniformity of Methocel® (Dow methylcellulose), production runs of this superior cellulose gum must pass a standard viscosity measurement. Solutions of Methocel are subjected to a very exacting measurement by timing the rate of flow through a capillary type of tube in the Ubbelohde Viscosimeter.

Range of viscosity is important, too. Methocel is available in nine different viscosity types, covering a broad range

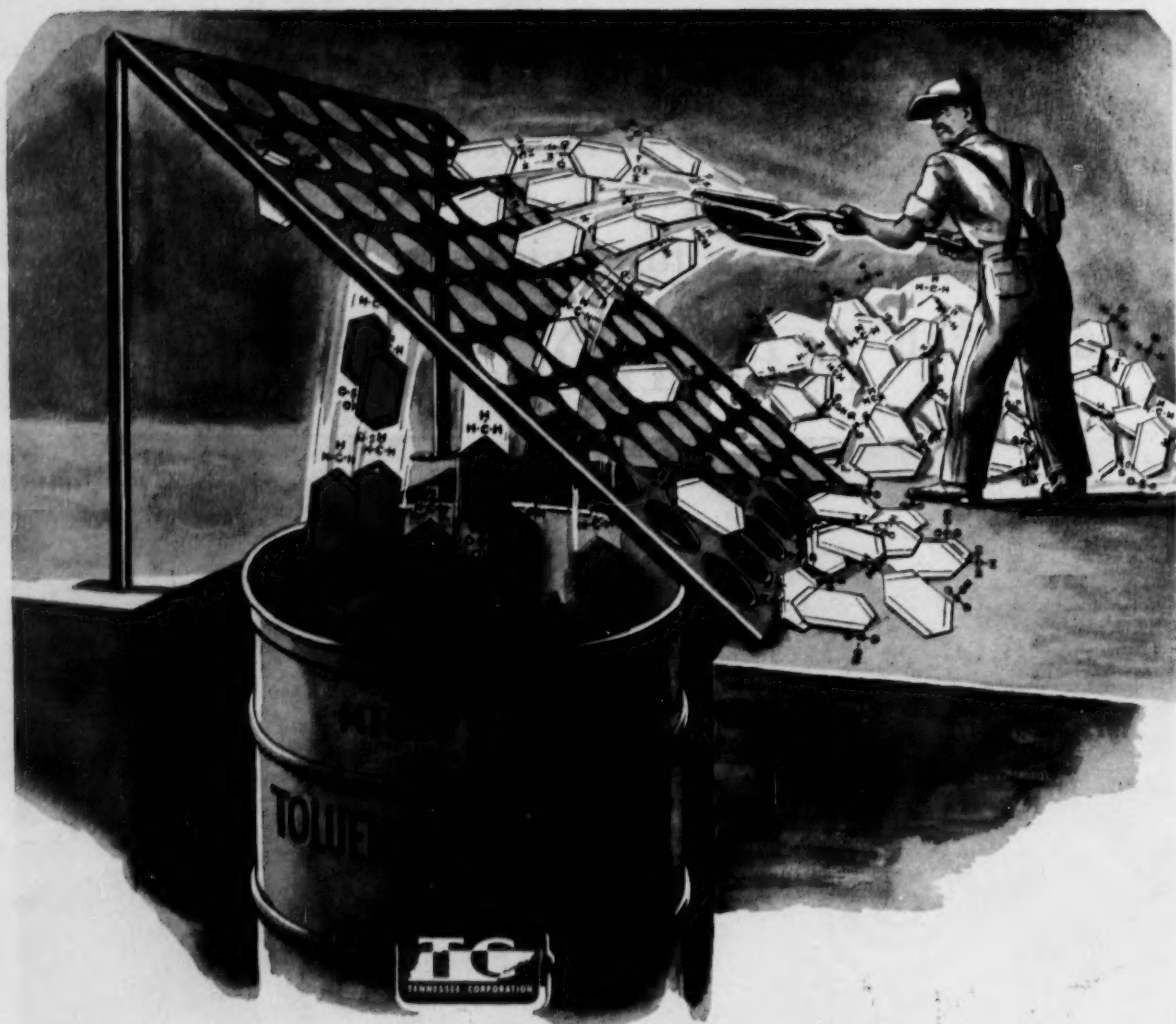
from 10 cps to 7,000 cps, as measured in 2% aqueous solutions at 20°C. By varying this concentration, an even greater range of viscosities can be obtained.

Viscosity control with Methocel has simplified processing and improved many products. Colorless, odorless, inert and remarkably stable solutions of this gum are also widely used as a stabilizer, thickener, suspending agent, binder and film former. For a free sample or assistance on your specific problem, write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. ME 826B-3.

you can depend on DOW CHEMICALS







Need a **HIGH-PARA** T.S.A.?

You Don't have to SCREEN...

We MAKE it that way.

IT'S **ANHYDROUS**, TOO!

ORGANIC CHEMICALS DIVISION

TENNESSEE

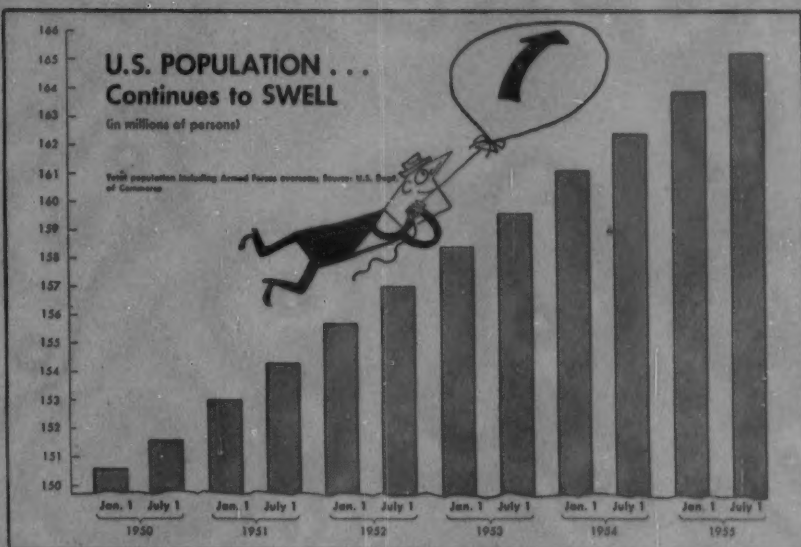


CORPORATION

617-629 Grant Building, Atlanta, Georgia

# Charting Business

CHEMICAL WEEK  
NOVEMBER 12, 1955

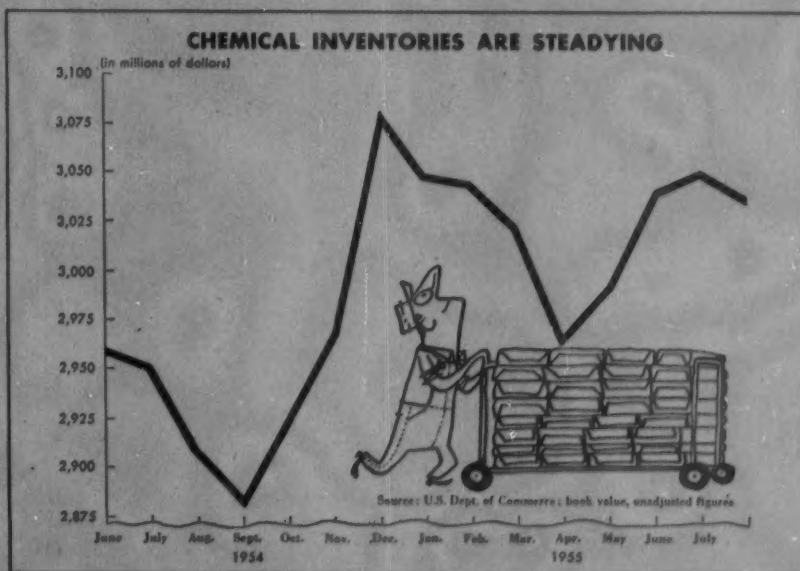


**T**HE surest backstop for business today, industry men agree, is the growing U. S. population. Consumer and investment demands are currently buttressed by rising incomes.

Over the long run, however, there's no more positive influence on the long-

term demand for products than the continually expanding population curve.

Assuming a constantly growing consumer public, chemical firms can expect to "double their current sales and triple their current profits by 1970," according to one company prognosticator.



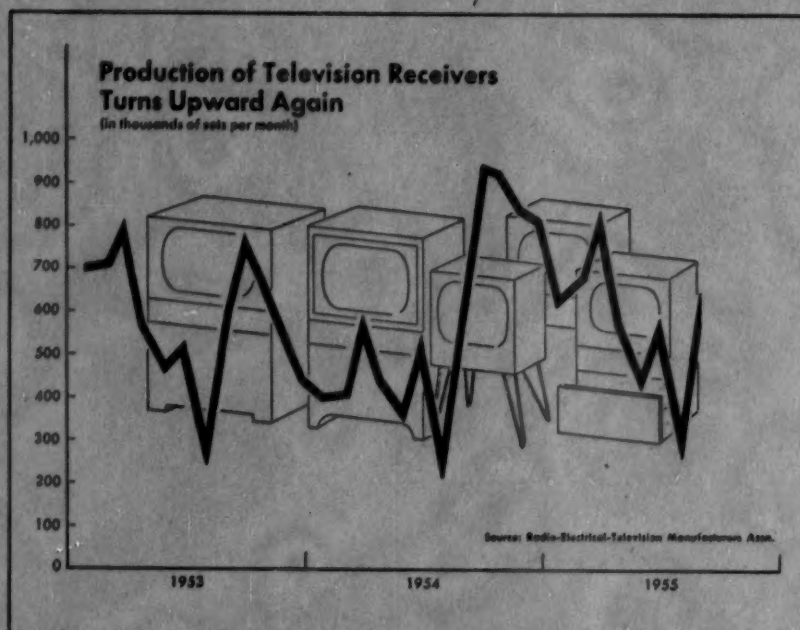
**O**RDERLY is the best word to describe the inventory picture in the chemical industries today.

Where buildup has occurred, management reports, it's been a gradual process; where fall-offs have occurred, the change has been slight.

Most chemical executives reporting a buildup (over October, 1954) say the increase today is "7-10%—at most"; company representatives who maintain that demand is exceeding production (and inventories are therefore falling) claim the drop "at best has been 12-14%."

## Charting Business

(Continued)



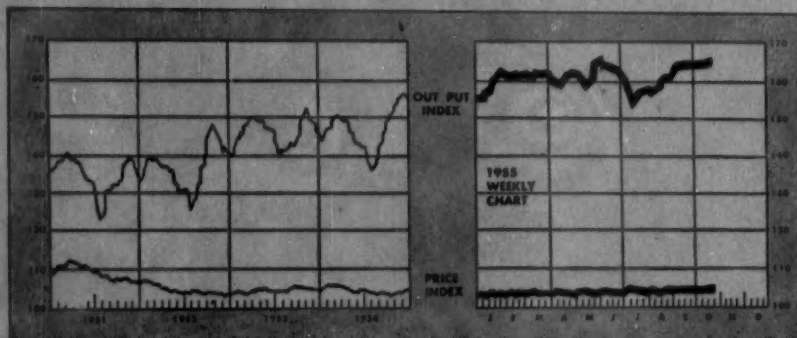
**G**OOD news for a sector of the chemical industry this week is the upturn in sales of television receivers in the U.S.

Last year, it's reported, cathode ray tubes for TV receivers consumed 180 tons of phosphorescent zinc-cadmium

sulfides; this year, if current trends hold up, that total could be increased to over 210 tons.

Among others tagged for a lift: plastics makers, who last year contributed an estimated 658 tons of plastics (mostly phenolics) for tube bases.

### BUSINESS INDICATORS



#### WEEKLY

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947-49 = 100)	168.7	168.2	155.7
CHEMICAL WEEK Wholesale Price Index (1947 = 100)	104.7	104.5	104.3
Stock Price Index of 11 Chemical Companies (Standard & Poor's Corp.)	445.4	443.9	323.6

#### MONTHLY—Trade (Million Dollars)

	Manufacturers' Sales			Manufacturers' Inventories		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
All Manufacturing	\$27,389	\$26,731	\$23,113	\$44,294	\$43,938	\$43,059
Chemicals and allied products	2,031	1,844	1,641	3,102	3,039	2,949
Petroleum and coal products	2,404	2,299	2,122	2,791	2,753	2,760

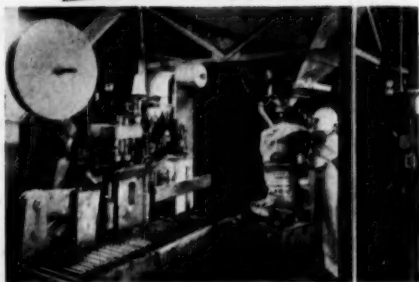


# Spencer Service is Wonderful



"Oh yes, we always pull over whenever he wants by."

**NEED HEXAMINE?**



For fast delivery of highest quality hexamine, call the nearest sales office of Spencer Chemical Company. Spencer hexamine is available in powdered and granular form from Spencer's new hexamine plant at Calumet City, Ill.

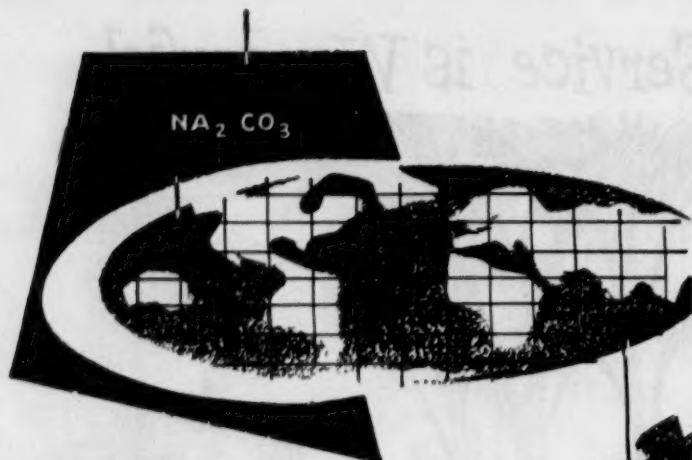
**SPENCER**

*America's Growing Name In Chemicals*

SPENCER PRODUCTS: "Poly-Eth" Polyethylene • Ammonia (Commercial and Refrigeration Grade) • Aqua Ammonia • 83% Ammonium Nitrate Solution • Synthetic Methanol • Formaldehyde • Hexamine • "Mr. N" Ammonium Nitrate Fertilizer • SPENSOL (Spencer Nitrogen Solutions) • FREZALL (Spencer Dry Ice) • Cylinder Ammonia

## SPENCER CHEMICAL COMPANY

GENERAL OFFICES: Dwight Bldg., Kansas City, Mo. DISTRICT SALES OFFICES: 500 Fifth Avenue, New York City; First National Bank Bldg., Chicago, Ill.; Candler Bldg., Atlanta, Ga.; Union Planters National Bank Bldg., Memphis, Tenn.



# Soda ash

... serving a world  
of industry

Few chemicals have affected industrial growth and improvement in the remarkable way that soda ash has. † Consider its important use in the glass industry, the textile, dye, leather, petroleum, and metallurgical industries . . . or in papermaking, acid neutralizers, chemicals, solvents, adhesives, and enamel mixes . . . and we can literally say that soda ash serves an entire world of industry! † Wyandotte is one of the leaders in soda ash manufacture . . . was, in fact, founded to produce soda ash for the glass industry. Today, we supply virtually every industry with soda ash. † Wyandotte light soda ash is noted for its uniform density, easy flowability, and rapid solubility. Our dense soda ash grades are thoroughly screened to assure consistent uniformity and commercial purity. Every shipment is analyzed before being delivered . . . your guarantee of total alkalinity. † We now have a new book containing complete information on Wyandotte Soda Ash. Write today for your free copy! Wyandotte Chemicals Corporation, Dept. CW, Wyandotte, Mich. Offices in principal cities.



**Wyandotte**  
**CHEMICALS**

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA • CHLORINE • MURIATIC ACID  
CALCIUM CARBONATE • CALCIUM CHLORIDE • GLYCOLS • CHLORINATED SOLVENTS  
SYNTHETIC DETERGENTS • OTHER ORGANIC AND INORGANIC CHEMICALS

B & I . . . . .



EASTERN PUBLISHERS SERVICE  
**KOREAN LAB: Now meeting all animal, poultry vaccine requirements.**

## FOREIGN. . . . .

**Vaccine/Korea:** One result of UNKRA's effort to restore industry to Korea is the National Veterinary Laboratory located at Anyang, near Seoul. Equipped at a cost of \$330,000, the plant is now producing monthly 26,000 10-dose vials of hog cholera vaccine and 12,000 vials of 100-dose Newcastle disease vaccine. This, government authorities claim, is sufficient to meet all Korea's current veterinary requirements, will go a long way to put the country back on a prewar economic footing.

**Japanese-Chinese Trade:** An export contract involving 30,000 tons of fertilizer was concluded last week between several Japanese companies and the Export-Import Corp. of Communist China.

Fertilizer will be shipped from Japan (f.o.b. \$34.30/ton) in exchange for Chinese rice and salt.

**Japanese-Argentina Trade:** Three other Japanese companies have signed a contract with Argentina—to export 2,000 tons of primary aluminum from Japan to Argentina. Shipments, according to the Japan Light Metal Assn., will be completed by the end of December.

**Potash/Jordan:** Said Aladdin, Jordan Minister of Economics, said in Cairo last week that final arrangements are being completed for a \$13-

million potash development in the Dead Sea. The Jordan government will initially subscribe \$2 million to the project; the remainder will be offered for public subscription in the other Arab states (including Egypt, Iraq, Saudi Arabia, Lebanon and Syria).

**Sulfur/Mexico:** The first U.S.-financed company to produce Frasch-process sulfur on the Isthmus of Tehuantepec in Mexico will reach a production of 500 tons/day before the end of November. The company—Mexican Gulf Sulphur Co.—started sulfur production in a jungle clearing at San Cristobal on March 1, 1954.

**Egypt/China Trade:** Egypt and Communist China have released details of a £20-million trade agreement, which was ratified by both governments late last month.

The agreement accords the "most favored nation" clause to both countries with regard to export permits and custom duties, also provides that since no payment agreement exists between them, payments are to be made by means of irrevocable letters of credit, to be opened, before any goods are shipped, in banks accredited by both countries.

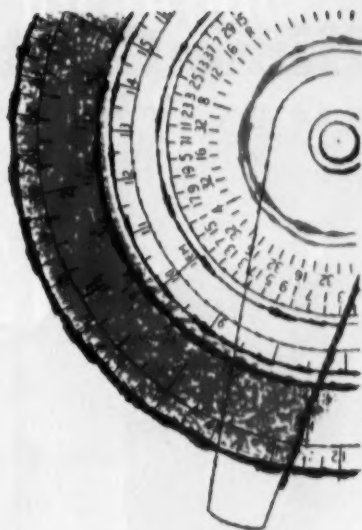
Involved: heavy shipments of calcium superphosphate to China.

**Imports/Japan:** The Japanese Minister of International Trade and Industry has allocated \$2.5 million in foreign currency for the import of chemicals from all areas. Goods to be imported include antibiotics, methionine, paraffin, cresol, and naphthalene.

**Expansion/Austria:** The Assn. of the Austrian Chemical Industry, a branch of the official Federal Chamber of Commerce, says that during the first six months of 1955, production of Austrian chemical plants increased 19% over the comparable period in 1954.

As a result, there is a temporary overproduction in certain sectors of the industry (e.g., cement production is running about 10% ahead of demand). Austrian companies are convinced, however, that this condition will smooth itself out as exports to other Central European nations increase.

# Calculating on a new product?



## call on us



The starting place of a new product is frequently in the precipitate at the bottom of a test tube—or in the lines of a spectrograph. On the other hand, product development in reverse—that is, exhaustive analysis of what goes into a product—often presents new clues to improvement by slight changes in chemical structure. ¶ Here at Wyandotte, we're equipped to do both: develop new products; improve old ones through the addition or substitution of research-developed chemical ingredients. ¶ If you've a new product in the works—or if you're revamping an old one—remember, our chemical know-how is on tap for you at all times. For technical assistance, outline your needs in as much detail as possible, and send your outline along to us. We'll forward as much pertinent

data as we have (and we have quite a bit). Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.

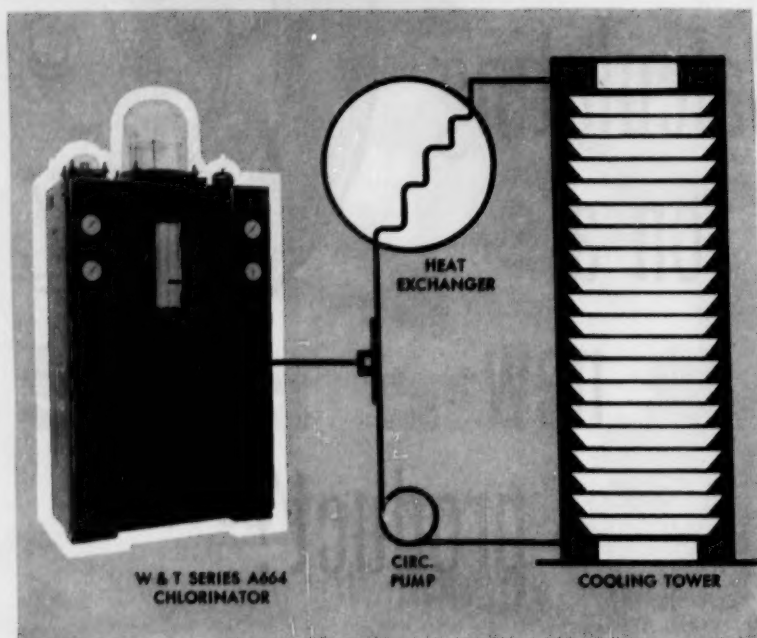


**Wyandotte**  
**CHEMICALS**

**HEADQUARTERS FOR ALKALIES**



# Slime Control...



## ...Chlorination of Cooling Water Circuits

Heat transfer losses caused by slime formation on condenser and heat exchanger water-side surfaces can be eliminated by chlorination of the cooling water. Water and air-borne organisms—the cause of slime formations—are effectively and economically controlled by Wallace and Tiernan chlorination systems.

The Wallace and Tiernan Series A-664 Chlorinator shown above is one of a complete line of W&T chlorination equipment, designed to give dependable chlorination at all feed ranges. It is used at large plants where cooling water chlorine requirements call for a durable high capacity unit.

### We Invite Your Inquiries

Technical information on cooling water chlorination is available in our free booklet, RA-2061-C. Bulletins on chlorination of industrial process water and industrial waste treatment are also available. Write us for your copy.

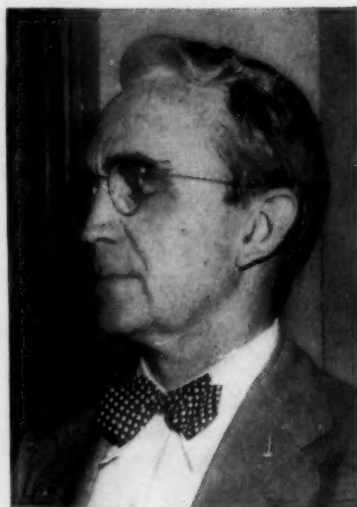


**WALLACE & TIERNAN INCORPORATED**

25 MAIN STREET, BELLEVILLE 9, NEW JERSEY

CD-40

B & I . . . . .



**JUDGE EDGERTON:** In 'semislow-down strike,' he upholds union tactics.

## LABOR . . . . .

**'Partial Strikes' Okayed:** Unless it's reversed by the U.S. Supreme Court, a decision by the Court of Appeals in Washington will clear the way for labor unions to use "harassing tactics" to pressure an employer into accepting union demands. The National Labor Relations Board had ruled that the CIO Textile Workers had failed to bargain in good faith with the Personal Products Co., citing the union's "slowdowns, unauthorized extensions of rest periods, walkouts or partial strikes, and similar tactics" during negotiations. In writing the decision that overturned the board's ruling, Judge Henry Edgerton reasoned that a full strike would have been legal and hence any lesser use of economic pressure must be permissible. Dissenting Judge John Danaher argued that if a union had the right to work whatever hours it wanted, it would also have the right to set all other conditions of employment. He quoted a Supreme Court decision in a previous labor case, which stated that "an employee cannot work and strike at the same time."

**Company Order Stands:** Another NLRB ruling recently upset by a circuit court concerned Monsanto's ban on distribution of union literature at a plant in Soda Springs, Idaho. The court held that the union had opportunity to reach the workers off the company's property.

There's a **PLAX** Package for products  
that cannot afford to be in

# ACCIDENTS

For such products, a Plax package is unbeatable.

Besides being unbreakable, it is warm to the touch and non-slip. Its light weight is another advantage and one that can save you hundreds of thousands of dollars in shipping costs.

Choice of colors and shape is unlimited. You also have a wide choice of dispensing methods. More than 50 different fitments enable you to select the one best suited to your product — whether it's spray, drop-by-drop, controlled pouring or direct application. For convenience packaging, consult Plax.

## **PLAX CORPORATION**

P. O. BOX 1019, HARTFORD, CONNECTICUT

IN CANADA: Plax Canada, Ltd., Montreal and Toronto



# PLAX

In plastic bottle packaging, only Plax offers continuous research, complete design service, and long experience.

HAVE YOU EVALUATED

# Castorwax<sup>®</sup>

## 12-HYDROXYSTEARIN

...the low cost synthetic wax with these 8 plus-features:

- High and sharp melting point (86°C)
- Oxidation resistant (iodine value <3)
- White in color
- Non-toxic
- Extreme resistance to organic solvents
- Compatible with most waxes, resins and elastomers
- Excellent electrical properties
- Resistance to oils and greases

Successfully used in.....

ADHESIVES  
CANDLES  
CRAYONS  
FOUNDRY WAXES  
GASKET IMPREGNANTS  
GREASES

HOT MELT COATINGS  
LEATHER COATINGS  
METAL DRAWING  
MOLD LUBRICANTS  
PACKINGS  
PAPER COATINGS

POLISHES  
POTTING COMPOUNDS  
RUBBER COMPOUNDING  
SEALANTS  
TEXTILE FINISHING  
TRANSFER INKS

...also as a chemical intermediate in—

ACYLATION  
AMINATION

ESTERIFICATION  
ISO-CYANATE COUPLING

SULFATION  
SAPONIFICATION

Technical Bulletin No. 7 gives details on the many uses of Castorwax and formulation information. Send coupon for your copy today.

Our Technical Service Department will welcome the opportunity to assist you at any time in solving your problems.

**THE Baker** ESTABLISHED 1937 **CASTOR OIL COMPANY**  
120 BROADWAY, NEW YORK 5, N. Y.

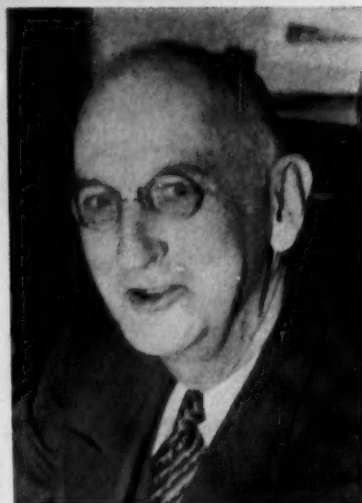
THE BAKER CASTOR OIL CO.  
120 Broadway  
New York 5, N. Y.

Please send ☐ Technical Bulletin No. 7  
☐ Sample of Castorwax

CW-115

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

B & I . . . . .



**JUDGE KNOX:** In new look-in on Alcoa case, a 'hard' or 'soft' policy?


### LEGAL . . . . .

**Antitrust Actions:** Alleged monopolies—past and present—are the bones of contention in actions in and out of court this week. Besides two court cases, there's the inquiry by the Senate's Antitrust subcommittee into structure, policies, and operations of General Motors.

• In January, the government's 1937 antitrust action against Aluminum Co. of America is to be reopened under provisions of Judge John Knox's 1950 order keeping the case alive for five years to see whether Alcoa would swallow up or put out of business the other U.S. primary aluminum companies that were then still in their infancy. Corporation lawyers are watching this case to see whether the Dept. of Justice will take a "hard" line and ask that the suit remain open, or will relent and agree to dismissal.

• A private antitrust suit that got nowhere in district court is still stalled at the starting line after review by a U. S. Court of Appeals. Dutch Paint Co. had sued National Lead and Du Pont, alleging a conspiracy for control of the titanium market had deprived it of titanium and income during 1947 and '48. The court pointed out that in those years—when titanium was allocated because of scarcity—Dutch Paint made "much greater" net profits than in 1949 when it could get all the titanium it wanted, and so could not claim to have been injured.






A NEW SOURCE  
FOR INDUSTRIAL  
CHEMICALS

## Sohio Chemical Company

LIMA, OHIO



**Now contracting for shipments  
to begin January 1, 1956**

Sohio Chemical Company's conveniently located plant offers relatively short tank car, tank truck or van-load delivery saving time and expense.

In addition to providing you with a new source of industrial chemicals, we will have available highly skilled technical assistance from our service laboratories to help solve problems of application in your particular industry.

For complete product listing  
and price quotations, write to

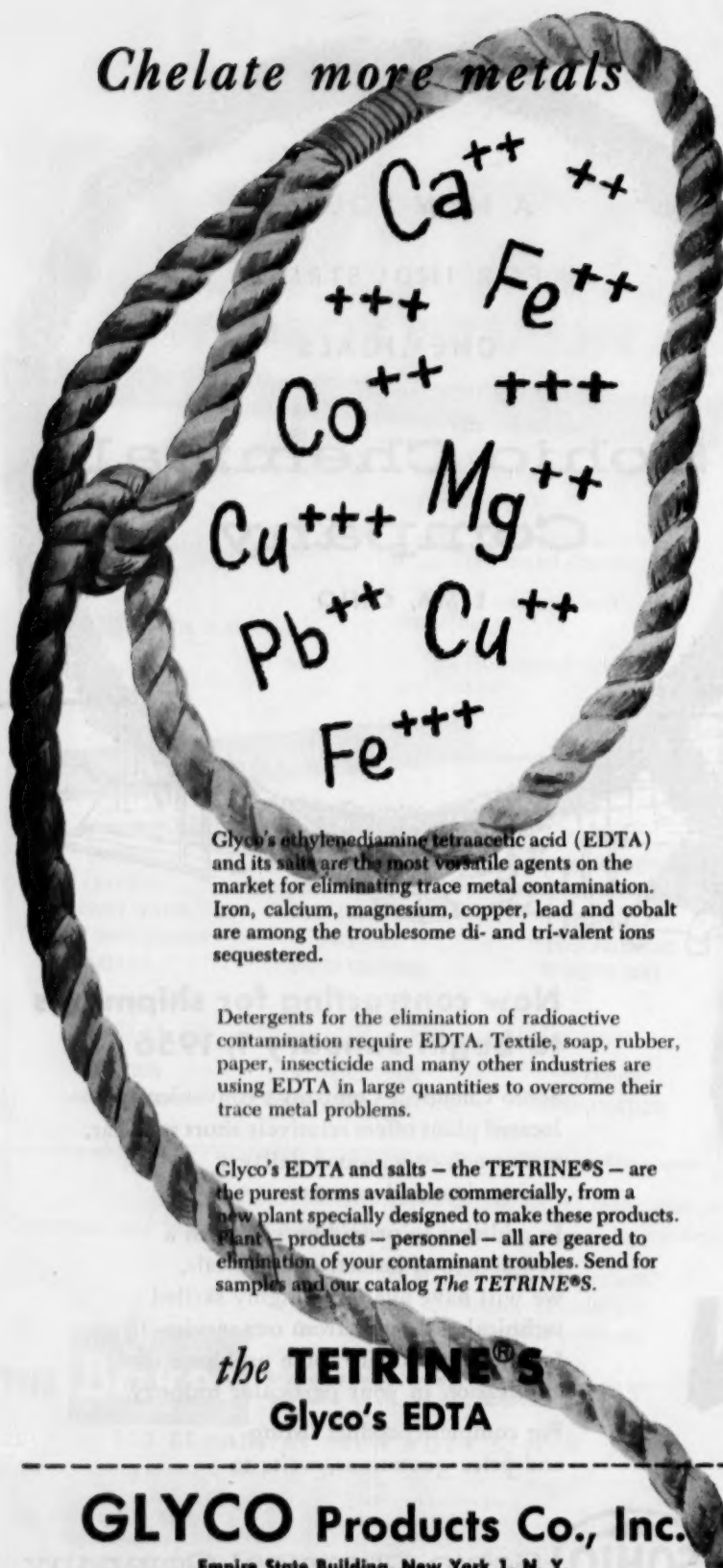
**Products now AVAILABLE**

ANHYDROUS AMMONIA  
Refrigeration grade  
Commercial grade  
AQUA AMMONIA  
NITRIC ACID  
UREA  
AMMONIUM NITRATE SOLUTIONS



**Sohio Chemical Company**  
LIMA, OHIO

## Chelate more metals



Glyco's ethylenediamine tetraacetic acid (EDTA) and its salts are the most versatile agents on the market for eliminating trace metal contamination. Iron, calcium, magnesium, copper, lead and cobalt are among the troublesome di- and tri-valent ions sequestered.

Detergents for the elimination of radioactive contamination require EDTA. Textile, soap, rubber, paper, insecticide and many other industries are using EDTA in large quantities to overcome their trace metal problems.

Glyco's EDTA and salts — the TETRINE®S — are the purest forms available commercially, from a new plant specially designed to make these products. Plant — products — personnel — all are geared to elimination of your contaminant troubles. Send for samples and our catalog *The TETRINE®S*.

*the* **TETRINE®S**  
Glyco's EDTA

# GLYCO Products Co., Inc.

Empire State Building, New York 1, N. Y.

NONIONIC SURFACTANTS • SYNTHETIC WAXES • EMULSIFYING AGENTS

B & I . . . . .

## KEY CHANGES

**Bert Cremers and Ford Ballantyne, Jr.**, to directors, Wyandotte Chemicals Corp. (Wyandotte, Mich.).

**Thomas M. Ware**, to administrative vice-president, International Minerals and Chemical Corp. (Chicago, Ill.).

**Birny Mason, Jr.**, to secretary, Union Carbide and Carbon Corp. (New York).

**Edmond S. Bauer, Jr.**, to assistant director, sales, Plastics Div., Monsanto Chemical Co. (Springfield, Mass.).

**John P. Manley**, to sales manager, General Ceramics Corp. (Kearney, N.J.).

**Carl A. Raabe**, to president and director, Durethane Corp. (Chicago).

**Nat C. Robertson**, to director, research, Escambia Bay Chemical Corp. (Shreveport, La.).

**Tom Kerestes**, to assistant sales manager, Kraft Chemical Co. (Chicago, Ill.).

**John G. Bill**, to president, Sharp & Dohme Div.; **William H. McLean**, to president, Chemical Div.; **Antonie T. Knoppers**, to vice-president and general manager, International Div.; Merck & Co., Inc. (Rahway, N.J.).

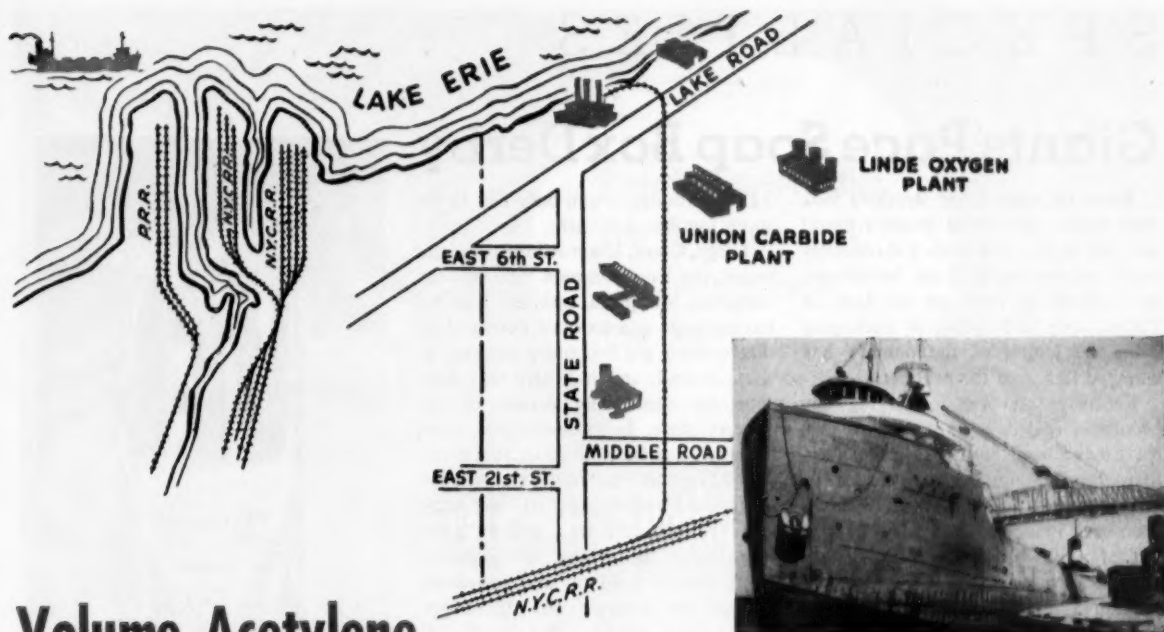
**Chester M. Brown**, to president, General Chemical Div.; **Richard F. Hansen**, to secretary, Allied Chemical & Dye Corp. (New York).

**H. B. Prior**, to director, Molybdenum Corp. of America (New York).

## CW Report

Next Week . . .

✓ CW Report author *Irv-ing Skeist* writes about the plas-tics industry. He sees the present boom continuing, albeit with problems; sees the problems lending themselves to profitable, though not easy, solutions. Too, there is a comprehensive check-list of plastics and their pro-ducers.



## Volume Acetylene Now Available at ASHTABULA

If you plan to use acetylene as a raw material in your proposed new plant, consider these advantages of the Ashtabula, Ohio, area:

**1. Acetylene by Pipe Line.** Acetylene gas can be generated at the UNION CARBIDE plant in Ashtabula and piped directly to you. In fact, acetylene now can be piped safely and economically for many miles.

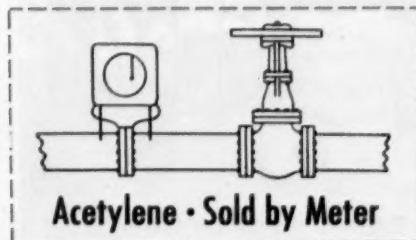
**2. Plant Sites Available.** Choice locations for your new plant are available in or near Ashtabula, and well within piping distance of volume acetylene.

**3. Ashtabula—A New Chemical Center.** Chemicals now produced in the Ashtabula area, in addition to acetylene and calcium carbide, include sodium, chlorine, oxygen, HCl, lime slurry, polyvinyl chloride, and trichlorethylene. Nitrogen is also available in large volumes.

**4. Transportation—Rail or Water.** Ashtabula is served by the New York Central, the Pennsylvania, and the Nickel Plate Railroads. With its location on Lake Erie, your products can be shipped by barge to all parts of the United States reached by inland waterways. Completion of the St. Lawrence Seaway will offer further advantages for bulk shipments.

UNION CARBIDE is also produced at Niagara Falls, New York; Sault Ste. Marie, Michigan; and Portland, Oregon, in addition to Ashtabula. Bulk shipments to chemical users can be made from any of these plants, including Ashtabula. Drum stocks for industrial users are maintained at 111 warehouses throughout the United States.

Whatever your plans or requirements, you are invited to telephone or write to LINDE's CARBIDE-ACETYLENE DEPARTMENT for complete technical information and counsel.



### LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street **USE** New York 17, N. Y.

Offices in Other Principal Cities

"Linde" and "Union" are registered trade-marks of Union Carbide and Carbon Corporation.



## Giants Pace Soap Box Derby

From the time Lever Brothers took soap flakes out of the grocer's barrel and put it in a box with a three-letter word printed on it (Lux, introduced to England in 1900, to the U.S. in 1906), soap and detergent packaging (and the length of the names) has changed less than the product.

Recently, however, packaging has become a real issue in the industry—there have been more new containers than brands. Soaps and detergents have gone into new, bigger boxes, pails, and even back into the barrel again.

Last week the most radical departure yet appeared: liquid Vel (Colgate-Palmolive Co.) in a polyethylene squeeze bottle with a metal top and bottom. Pull away the attached cap (spout, cap and attacher are all molded in one polyethylene piece), invert, and squeeze, and you get a squirt of detergent. Reportedly cheaper than glass, the new container, made by Bradley Container Corp. (Maynard, Mass.), costs roughly 20% more than cans. The new Vel is still in test stages.

Conspicuous on grocers' shelves, on the other hand, is another trend in packaging: toward larger sizes (on up to 125-lb. drums). This is most true in rural and semirural areas (including the booming suburban supermarkets). Sears, Roebuck and Co. says that 67% of its Soapthetic (ordered by catalog) is sold in the 25-lb. size, 25% in the

125-lb. wooden drum, only 8% in the more familiar 3-lb. size.

**Large, Giant, King:** Admittedly mail order, the least common type of soap shopping, is a special case. But it shows having huge quantities of detergent or that women are becoming adjusted to soap around, and indicates they may soon be demanding drums in the grocery store. In most markets, now, the small size (around 20 oz., variously called "regular" or "large") is still the biggest unit seller. But the old large size (roughly 50 oz., called "giant economy") is selling considerably better than it used to, and consumer demand has brought out still larger sizes (many brands offer an 80-oz. "king" size). We now seem to be heading into a new round of package expansion—already Procter & Gamble has a "home laundry"-size Tide (16 lbs.).

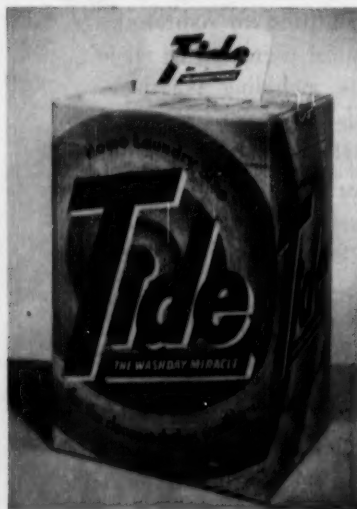
The trailblazers for the big packages were the makers of low-suds detergents, following the lead of Monsanto, maker of All, which is sold in 5 sizes: 24 oz., 10 lbs., 25 lbs., 50 lbs. and 100 lbs. (the 50- and 100-lb. fiber board drums are, it is reported, being sold in some grocery stores). The most interesting All package is the 25-lb. galvanized pail. Although the 25-lb. size is also available in heavy corrugated cardboard at 40-45¢ less (the pails cost Monsanto about twice as much as



**OLD?** Now in metal can, liquid Vel is trying polyethylene squeeze bottle.

the cartons), the re-use possibilities of the pail have made it a popular item.

**No More or Less:** The fact that customers are buying bigger boxes of soap and detergent doesn't mean that they buy more of it, however—they just buy it less often. No matter how big the box, each American has, since 1948, used about 25 lbs./year (for the past 30 years, per capita soap sales have never been less than 21 lbs./year, never more than 30).



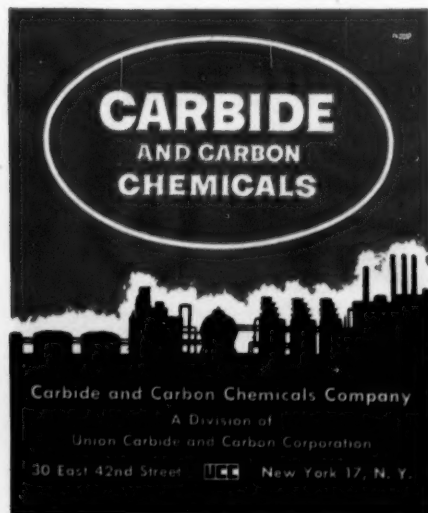
**BIG, BIGGER, BIGGEST:** New 16-lb. Tide and full All line show trend to selling more detergent at a time.

For Humectant Action plus...

Powerful Solvent Action  
Low Viscosity  
Low Freezing Point  
Low Cost

Use Carbide's **Diethylene Glycol**

As a hygroscopic agent, diethylene glycol is equivalent to glycerol—and because of its ether linkage, it is generally a better solvent for resins, dyestuffs, and proteins. This solvent power coupled with a low freezing point ( $-8.0^{\circ}\text{C}.$ ) and low viscosity (35.7 cps. at  $20^{\circ}\text{C}.$ ) gives diethylene glycol a range of usefulness that cannot be equalled by other commonly-used humectants. And diethylene glycol gives more humectancy and solvent power for your dollar than any other humectant.



Diethylene glycol is successfully used for:



Gas dehydration



Compounding of GR-S synthetic rubber



Moistening and softening agent for adhesives, cellophane, paper, glues, and gelatin



Resin solvent and softener in composition cork



Humectant and resin solvent in steam-set inks



Humectant for tobacco



Conditioner for textile fibers and yarns



Dyestuff solvent and humectant for printing pastes that will not dry out on storage



Gas reaction inhibitor in casting magnesium and aluminum

You can also use diethylene glycol as a mutual solvent in cutting oils, as an intermediate in the preparation of alkyd resins and fatty acid esters, and as a solvent in the processing of intermediates for cortisone.

**Availability:** Diethylene Glycol is available in commercial quantities. For technical help, samples, or prices, call the Carbide office nearest you.

Borden's  
**LEMOL**  
Polyvinyl Alcohol

Borden's Chemical Division offers industry a wide variety of polyvinyl alcohols, "LEMOLS". They can be used as emulsifiers and stabilizers . . . in adhesives . . . for paper coatings and saturants . . . for textile sizings and finishes . . . for binders . . . and for films, fibers and molded products. The various grade of LEMOLS enable the compounder to develop these properties:

- Flexibility
- Ultra high viscosity
- Non-jelling
- Adhesion
- Non-ageing
- Light stability
- Grease proof qualities
- Gas proof qualities
- Protective colloidal action
- High pigment binding power
- High cold water solubility
- Low cold water solubility

Borden's  
**LEMAC**  
Polyvinyl Acetate  
Beads

Borden PVA beads, known as "LEMACS", are available in the following viscosity grades: LOW: 7, 15, 25; MIDDLE: 40, 150; HIGH: 1000, 6000; AND ALSO IN WATER DISPERSABLE BEADS. They are ideally used for:

- Low cost thickeners for inks, paints, lacquers, hot-melt coatings.
- Exceptional light stability, strength, and water-resistant coatings and adhesives.
- Metallic inks for use on cellophane, glassine, foil, and plastics.
- Adhesives for ceramics, cork, leather, metals, paper and plastics.
- Clear, flexible, high-gloss coatings for decoration and heatsealing.

For further information or samples of either LEMOL or LEMAC, write The Borden Company, Chemical Division, Monomer Dept. CW 115, Leominster, Massachusetts.



Monomer Department  
**THE BORDEN COMPANY**  
CHEMICAL DIVISION

The advantages for the manufacturers when a larger size is bought: he has a better chance to build up customer loyalty, needs less merchandising work to sell the same volume. In a highly competitive field like this, the latter is important—sales are hard to make, so the fewer you have to make, the better.

**For 2¢:** The advantages for the housewife are more difficult to figure. It seems probable that most housewives think they are saving a significant amount of money by buying the "economy" sizes. If they stopped to compute however, they would see that at most they are saving only something between 1½-2¢ on the 50-oz. box over an equal volume in the 20-oz. size. In some cases, the large size actually costs more per ounce. If other manufacturers follow All's example, though, savings may become real with purchases of bigger than 10-lb. sizes. The 25-lb. box of All is about \$1.35 cheaper than 25 lbs. bought in 24-oz. packages, nearly \$1 cheaper than if bought in 10-lb. packages.

In the case of the newly introduced large-size scouring cleaners, there seems to be a difference of opinion as to whether or not to save the buyer money. The "giant"-size Ajax (Colgate) saves the purchaser 6¢, but in the "giant economy"-size Bab-O (B. T. Babbitt, Inc., New York), the product costs exactly the same per ounce as in the small size.

**Gold Bars:** Size isn't a factor in bar soaps, as yet. The emphasis there is on the wrapping, and the excitement is about foil. In Jan. '54, Wilson & Co.,



**NOW TWO:** Cleanser, long time a one-size product, now has 21-oz. king size.

Inc. (Chicago) introduced its Creamade deodorant cold cream soap (still being test-marketed, chiefly in the Southeast) with a gold foil wrap, the first popular-priced soap so packaged.

Lever Brothers put its Lux toilet soap in gold foil this year, and is also foil-wrapping its new cold cream soap—Dove, now being test-marketed in the Midwest. The chief foil advantages: a luxurious look and good moisture and perfume retention. Four others may soon have foil-wrapped bars.

This seems to be the way with the soap and detergent industry—good ideas don't stay exclusive very long. You can look for extra-heavy soap boxes to spread through the industry, more tests of "polyethylened" liquids.



**FOILED:** Third bar to get gold wrap, new cold cream soap won't be last.



**Another new development using**

# **B. F. Goodrich Chemical** raw materials



*B. F. Goodrich Chemical Company does not manufacture this pipe. We supply only the Geon resin.*

## **CHECK THESE 4-WAY SAVINGS WITH RIGID VINYL PIPE**

**Installation time cut • Heavy machinery eliminated • Two man crew does the job • No corrosion, longer life.**

Here's a hot case history of how costs were cut four separate ways by specifying plastic pipe made from Geon high impact rigid vinyl resin. The installation collects crude oil in a water flood system near Tulsa, Oklahoma.

The plastic pipe replaces 2 miles of steel pipe that failed due to salt and sulphur corrosion. A two man crew laid 640 feet of 3 inch rigid vinyl pipe made from Geon resin in an hour. No heavy machinery was used; the pipe

is so light a length can be handled by one man.

Biggest saving comes from the long life of rigid vinyl pipe made from Geon resin. It withstands rough handling, won't corrode, has better chemical resistance, and costs less than many other pipe materials.

Rigid plastic pipe is but one of many products made from Geon polyvinyl materials that show similar economies in both installation and upkeep. Sheets, valves and other products used in the petroleum and chemical industries demonstrate daily the versatile qualities of Geon polyvinyl

materials. For information on Geon materials, please write Dept. K-12, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.



**GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable.**

**GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors**

# WAXES AND FLOOR FINISHES PRODUCTION (Nonretail products)

1953 in black

1954 in color

(all figures in gallons unless stated otherwise)

	Manufacturers' Own Brands		Products for Others to Label	Totals
	Manufactured	Purchased		
<b>Wax Emulsions (self-polishing)</b>				
16% and more nonvolatile	689,018	37,208	249,395	975,621
	856,494	34,699	229,037	1,120,230
Less than 16% nonvolatile	4,692,111	79,983	2,817,042	7,589,136
	5,154,322	79,817	3,111,081	8,345,220
<b>Solvent-Type Waxes</b>				
Liquid waxes	297,862	871	145,269	444,002
	307,381	1,324	130,805	439,510
Paste waxes (in pounds)	1,227,818	2,550	1,124,932	2,355,300
	1,270,517	2,758	1,202,910	2,476,185
<b>Paste Wax Emulsions (pounds)</b>	96,366	—	135,657	232,023
	119,033	—	244,770	363,803
<b>Resin Finishes (exclusive of shellac varnishes)</b>				
Aqueous	464,408	—	147,827	612,235
	450,636	—	231,205	681,841
Alcohol	89,999	—	10,317	100,316
	80,544	—	11,065	91,609
<b>Floor Sealer and Gym Finishes</b>				
Nonaqueous, oleoresinous, petroleum-solvent	1,084,162	312,316	249,757	1,646,235
	1,045,407	238,472	240,318	1,524,197
Lacquer and others	24,417	11,335	—	35,752
	22,170	9,068	—	31,238
<b>Liquid Floor Cleaners and Wax Strippers</b>				
20% or more nonvolatile	1,522,929	3,900	294,878	1,821,707
	1,622,261	4,200	283,988	1,910,449
Less than 20% nonvolatile	3,043,413	24,513	389,398	3,457,324
	3,168,691	23,571	392,624	3,584,886
<b>Dust Mop Treatment (exclusive of floor)</b>	375,212	500	51,238	426,950
	450,461	700	98,383	549,544
<b>Sweeping Compounds (pounds)</b>	37,491,905	1,259,492	29,862,000	68,613,397
	39,899,254	1,458,261	32,054,000	73,411,515

## Totting Up Floor Products

A long stride forward for manufacturers of floor treatment compounds or specialties was taken last month with the completion of the first chemical Specialties Manufacturers' Assn. survey of their products (*CW Market letter*, Oct. 29, p. 79). The report, a welcome addition to the statistical information compiled in recent years by CSMA (aerosol, insecticide, brake fluid surveys), concerns itself strictly with products for industrial use.

Still a major target: production

figures on the chemicals sold retail.

Nonetheless, there is a wealth of material in the data so far accumulated (*see chart*.) The firms replying to the survey (as with other CSMA surveys, an outside accounting firm, Ernst & Ernst, has compiled the figures) represent an estimated 70% of the companies in the particular product area surveyed. Figures for both 1953 and 1954 are included in the study, and the production increases shown reflect the generally good business in '54.

**Clean Sweep:** The largest figure, probably representing one of the largest volumes of all specialties, concerns the poundage of sweeping compound produced—a staggering 73.5 million lbs. (and a 7% increase over 1953).

Waxes, in self-polishing water emulsions, in solvents, and in paste wax emulsions, were used in impressive amounts: 9,465,450 gal. of the water-base types, 439,510 gal. of the solvent types, and 2,476,185 lbs. of solvent-base paste waxes.

Liquid floor cleaners were turned out in substantial quantity—5,495,335 gal., a 4% increase over last year.

# NOBODY BUT BORDEN GIVES FORMALDEHYDE SERVICE LIKE THIS—

- ✓ As you want it!
- ✓ In the quantity you want!
- ✓ When and where you want it!



**Consider these important Borden advantages  
before you sign your 1956 formaldehyde contracts!**

Next year, why not have your formaldehyde orders "custom-filled" at no extra cost by dependable Borden sources?

Borden has nearby facilities at 4 strategic points: Bainbridge, N.Y., Kernersville, N.C., Demopolis, Ala., and Springfield, Ore. And each is governed by the Borden policy that formaldehyde is a "specialty" . . . not just a bulk stored commodity.

That means you can order formaldehyde from Borden as you want it: 37%-44% inhibited or uninhibited, and in special formulations to meet your stated specifications. You can order just the quantity you want for current needs: no need to maintain large storage tanks because you can always get a new supply promptly in either drum, tank truck, or tank car quantities. And you are always assured of prompt delivery from your nearest source: delivery on short notice via our own tank trucks if you're within 300 miles . . . tank cars beyond that point.

Remember—don't sign that 1956 formaldehyde contract until

you have contacted Borden for a quotation on formulations to meet your specifications. The Borden Company, Chemical Division, Dept. CW-115, 350 Madison Ave., New York 17, N. Y.

**INDUSTRIAL CHEMICALS**

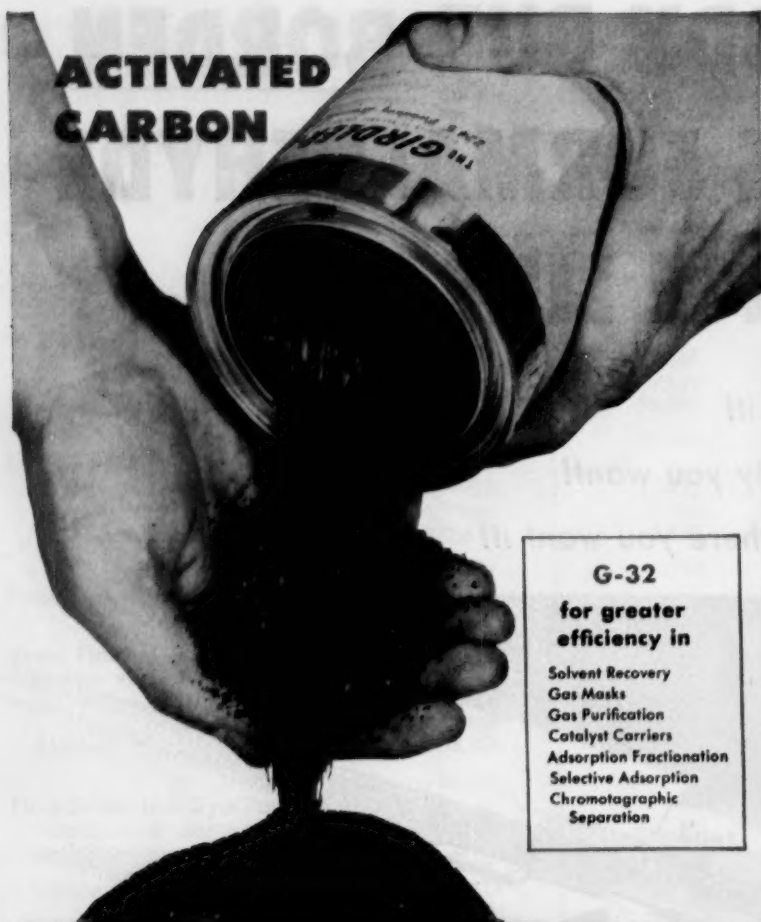
**THE Borden COMPANY**  
CHEMICAL DIVISION



**FORMALDEHYDE \* HEXAMETHYLENETETRAMINE \* CASEIN \* Urea-Phenolic-Polyvinyl-Epoxy-RESINS**



## ACTIVATED CARBON



### G-32 for greater efficiency in

Solvent Recovery  
Gas Masks  
Gas Purification  
Catalyst Carriers  
Adsorption Fractionation  
Selective Adsorption  
Chromatographic  
Separation

## ...Girdler's highly adsorbent G-32 activated carbon

G-32 is a highly dense and hard material, of a coconut shell base. High density and high adsorbing capacity make it an extremely efficient material in recovery, purification, and other uses. This activated carbon is available in a wide range of grades and sizes to meet the specific requirements of your applications.

Try G-32—judge its outstanding properties for yourself. Samples are available on request. Write Girdler or call the nearest Girdler office today.

*The* **GIRDLER** *Company*

A DIVISION OF NATIONAL CYLINDER GAS COMPANY  
LOUISVILLE 1, KENTUCKY

GAS PROCESSES DIVISION: New York • San Francisco  
VOTATOR DIVISION: New York • Atlanta • Chicago • San Francisco  
In Canada: Girdler Corporation of Canada Limited, Toronto

## SPECIALTIES . . . . .

### Stopped Inside

An effective new approach to the problem of permeability, long a handicap to packaging in polyethylene, is now claimed by Bradley Container Corp. (Maynard, Mass.). Last week, the firm showed off the first Bracon tubes featuring a special plastic lining, which is claimed to permit use of polyethylene in 80% of the cases where it had been previously ruled out.

So far, although some products have been packed and sold in the new tubes, they are still pretty much trial items. Bradley, however, is set for full commercial production, and is seeking new products to test with its lined units. There is every indication now that such products as oil or grease, many essential oils, and many oxygen-affected materials can be accommodated, Bradley says.

**Liquid Liner:** Because the coating process isn't yet fully patent-protected, Bradley won't tell what the lining material is. Cellulose acetate or polyvinyl chloride has been suggested by others as possible material; perhaps even in combination.

The coating process is somewhat like this: the formed tubes are "flush-filled" from the bottom, with the coating in liquid state. The coat is not brought up onto the sealing area of the tube, where it might interfere with the heat-sealing of the base.

The transparent coating, so far applied to tubes wedge-sealed, can also be applied to the new 2 M. E. containers (p. 50), and the firm hopes soon to have it work with containers that have polyethylene disc bases. Price of the coating varies with tube size; it is said to add roughly \$1/gross to cost of the tubes.

### Second Start, Slow

**The rule** that you have to learn to walk before you can run applies to the launching of a product, too. Ask Chemical Corp. of America\* (Sanford, Fla.), which got its insecticidal floor polish, Freewax, off to a sprinter's start three years ago—and only ended up winded.

At the time of its introduction, Freewax was given the benefit of loads of publicity. A chlordane and wax formulation, it was specifically designed for

\* Formerly, the Freewax Corp.

**it pays to see VICTOR**



## PHOSPHATES

### MAKE WATER WORK BETTER



Of all the elements placed at the disposal of man, none is more widely used in manufacturing processes than water. But sometimes water possesses minerals which impair its ability to work at top efficiency. Throughout industry, Victor phosphates are used to make water work better. Cement manufacturers increase production and realize lower costs by adding a sodium phosphate to the raw slurry — less water is required and pumpability improved. Added to boiler water, sodium phosphates prevent costly scale . . . and Victor sodium tripolyphosphate is most effective as a builder in detergents and soaps.

Write for the Victafile listed on the back page that tells how Victor chemicals are used in *your* industry. *It Pays to see Victor.*

### AND THE GREEN GRASS

#### GREW...



Liquid fertilizer solutions give roots a hearty meal. These solutions are easily applied, and produce a sturdy, healthy growth of all plants and grasses because nitrogen, phosphorus, and potash are present in a readily available form. Today, many formulators specify one or more of Victor's ammonium phosphates, potassium phosphates, or phosphoric acids, for the preparation of liquid or dry concentrates.

Fertilizer manufacturers and formulators are invited to send for the Victafile and complete data on this new development. *It Pays to see Victor.*

### BRUSH YOUR TEETH WITH PHOSPHATE?



Sure you do . . . because Victor calcium phosphates are important polishing agents in many of today's leading dentifrices. These pure, tasteless phosphates are manufactured to meet exacting specifications. They are soft enough to polish brilliantly and at the same time clean teeth effectively. Victor offers a complete line of dentifrice grade calcium phosphates, and our technical service department will be glad to help you select the best one for your needs.

Victor produces phosphates of exceptionally high purity and many of them also comply with USP and NF specifications. They are included in various Victafiles listed on the back page. *It Pays to see Victor!*





## PATTY BAKES A CAKE

With today's easy-to-use prepared cake mixes, even mother's little helper can bake an outstanding cake. Cake baking is no longer a "trick" . . . because modern mix-makers select Victor phosphates for the leavening. The "phosphate" is the determining factor in producing a cake with good volume, fine texture, and excellent flavor. And, it is also of major importance in the shelf-life of the mix. That's why most of the leading mixes contain one or more Victor phosphates.

For information on a variety of phosphates that solve leavening problems, send for the new Victafile from the list on the back page. *It Pays to see Victor!*

## VICTOR CHEMICAL WORKS

155 NORTH WACKER DRIVE • CHICAGO 6, ILLINOIS

# New facts about

# Victor Chemicals for

# your industry

Here's a brand-new concept in chemical literature that's tailor-made for *your* industry. Each Victafile contains complete data on Victor phosphates, formates, and oxalates used in *your* industry. In simple, concise form, each Victafile provides important technical information on the Victor chemicals you can use to cut costs, increase production, or add sales appeal.

Send for your copy of the Victafile edited especially for *your* industry. Just circle the number of the Victafile you want, clip the coupon to your letterhead and mail it today.

## SELECT THE VICTAFILE FOR YOUR INDUSTRY

- |  |                                      |
|--|--------------------------------------|
| 1. Agriculture                           | 9. Leather Tanning                   |
| 2. Chemical Manufacturing                | 10. Metal Finishing and Rustproofing |
| 3. Dentrifices                           | 11. Mining and Drilling              |
| 4. Detergents and Soap                   | 12. Paints                           |
| 5. Flameproofing                         | 13. Petroleum Products               |
| 6. Food and Beverages                    | 14. Pharmaceuticals                  |
| 7. Glass, Ceramics and Vitreous Finishes | 15. Plastics                         |
| 8. Industrial and Household Cleaners     | 16. Pulp and Paper                   |
|  | 17. Textiles                         |
|  | 18. Water Treatment                  |



Victor Chemical Works  
155 N. Wacker Drive  
Chicago 6, Illinois

CEP

Please send the Victafile for our industry circled below:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

ATTENTION \_\_\_\_\_

Please send sample of Victor \_\_\_\_\_

☐ We have a particular problem; if there's no obligation, please have technical service representative call.



PRINTED IN U.S.A.



**FEINBERG:** Too much good publicity can be dangerous.

the insect problems facing householders in hot climates. It seemed such an ingenious product that it was given attention in national newspapers and magazines. Its makers, deciding to take full advantage of the free publicity, began shipping Freewax throughout the country.

And that's where the trouble began. Though it was made available nationally, getting consumers to buy it in worthwhile volume was another matter. Necessary advertising, Freewax soon discovered, cost far more than it could afford. So, painful as it seemed, Freewax Corp. finally killed its big plans. It retrenched to its original marketing area (three Southeastern states, Hawaii, and Phoenix, Ariz.) and was reorganized as Chemical Corp. of America.

**Patience Payoff:** But dropping from 48-state distribution to three-state distribution didn't turn out to be as painful as first feared. Says J. M. Feinberg, president of Chemical Corp.: "We're now shipping as much in a month as we did in the first year of production."

Additional evidence of big home-area success are the expansion plans—production capacity is being doubled (it is now about 50,000 pints per day). The polish has a new container; it is now being packed in the nesting-type, oblong cans (successors to "F"-style cans, *CW*, May 28, p. 92) with a no-drip, plastic spout.

Too, it has been slightly altered chemically. Lindane is now incorpo-

## Production Bottleneck

100% fire safety, 100% of the time is the responsibility of administrative and plant operating management alike. A small fire can become a big fire . . . a business-destroying fire, when maximum protection is not provided 24 hours a day, every day of the year.

No protective method yet devised exceeds the value of ENGINEERED "Automatic" Sprinkler PROTECTION. It never fires—never sleeps—never takes time off. It's always ready to feel fire . . . to shout fire . . . to kill fire, whenever your plant production is threatened.

No one profits from fire loss, but you can profit in more ways than one, when ENGINEERED "Automatic" Sprinkler PROTECTION safeguards production bottlenecks in your business. Let us show you how!

### "Automatic" Sprinkler

CORPORATION OF AMERICA  
YOUNGSTOWN, OHIO

Offices in principal cities of North and South America

**\$600,000 BLAZE SWEEPS THE HERALD WAREHOUSE**  
Smoke Hangers' Fire Department  
45 FIREMEN OVERCOME.

**18 DIE, 37 HURT, 16 MISSING IN FACTORY FIRE**  
Blast, Flames Raze Plant

**FLOUR MILL FIRE LOSS ESTIMATED AT \$1,000,000**  
22 Injured When Dust Explosion Wrecked Portions Of Plant

**FIRE DESTROYS PORTION OF STOCKYARD**  
DAMAGE RUNNING CLOSE TO \$600,000

**WAREHOUSE**  
BURNS MILLION GALLONS

**MISSING IN FACTORY FIRE**  
Raze Plant On Near North Side

**CHIEF DIES IN**  
20 Apartments  
Fire In City's

**LOSS IN MICHIGAN**  
MILL AND YARD FIRE

**BURNING OUT, DANGER**  
Still Big Threat. Damage More Than \$100,000 Up In Block, City

**SET AT MILL**  
And Sets \$

**EXPLODES AND SETS**  
Containers Aflame

**PLANT DESTROYED BY FIRE**  
Endangered — \$500,000 Loss

**High**  
10 Million  
Only Smoke

**LOSS ESTIMATED**  
BLOCK DESTROYED

**DESTROYED BY FIRE**  
AT \$300,000





## ... perhaps YOU can add a chapter

● Styrene Monomer is well known throughout industry for its diversity of applications. Among them are the manufacture of polystyrene plastics, synthetic rubbers, which are used for tires and other styrene-butadiene copolymers used for paints, paper and textiles. Additional applications include the manufacture of styrene resins for coating and impregnating porous and fibrous materials, and the manufacture of polyester laminating resins, styrenated drying oils and styrenated alkyds for paints, enamels and varnishes.

But the story of Styrene Monomer is not finished. Its reactive chemical characteristics promise many more valuable applications. Styrene Monomer may be hydrogenated, halogenated, hydrohalogenated, hypohalogenated and oxidized—and it reacts with water, alcohols, sulphur compounds, and aldehydes to mention only a few of its possibilities.

Write today for samples for your own experimentation—and for more detailed information about this chemical that may be the key to new or improved products in your field.

### KOPPERS COMPANY, INC.

Chemical Division, Dept. CW-115 Pittsburgh 19, Pennsylvania



# Koppers Chemicals

SALES OFFICES: NEW YORK • BOSTON • PHILADELPHIA • ATLANTA  
CHICAGO • DETROIT • HOUSTON • LOS ANGELES

## SPECIALTIES . . . . .

rated, in place of chlordane. The objective: a safer, less odorous product.

And though it is still definitely a premium-price product, Freewax has dropped in price. Pints now sell for 79¢ (instead of 89¢); quarts for \$1.39 (from \$1.59); and gallons for \$3.98 (from \$4.98).

**Semisaturation:** Since it has settled on the policy of localized selling, Chemical Corp. has adapted several sales techniques to its own operation.

Feinberg is particularly pleased with its free sample program. Trial pint sizes of Freewax are given to housewives at every other house in a sampling area. Feinberg figures the firm saves on initial outlay, doesn't saturate the market so that dealers must wait weeks for sales, and actually promotes conversation about the product.

**Show Them How:** Besides his sampling schemes, Feinberg advertises heavily in newspapers and TV—he prefers “demonstration” ads on TV. This gives Freewax a degree of advertising saturation that would cost millions if done nationally. Only in bits, as the firm grows, is territory added, and only if the same high level of advertising can be kept up.

The trials in selling Freewax so far haven't discouraged Feinberg. He has resisted offers by larger firms to buy his product. And he feels he has learned a lot about introducing new products to the market. Enough so that Chemical Corp. now has a couple of other specialties planned, too—Feinberg gives no details now—which should be on the market by next year.

● **New for Industry:** Among the new products of interest to specialties makers:

● American Cyanamid's Fine Chemicals Division is now selling an improved folic acid to the drug trade. The product contains a minimum of 93% actual anhydrous folic acid (about 10% above current official requirements). It is also said to have a lighter color, and is useful for both parenteral and oral preparations.

● General Latex and Chemical Corp. (Cambridge, Mass.) is offering a new water-soluble polymeric soap with molecular weight of about 30,000. It is medium tan in water solution of 10% active solid content.

● Witco Chemical Co. (New York) is now selling an odor-free emulsifier-coupler for use in polyurethane foam



## The first ammonia plant in the Intermountain Area

Blaw-Knox engineers have designed, and now are constructing a new anhydrous ammonia and fertilizer plant for U. S. Steel's Columbia-Geneva Steel Division at Geneva, Utah. It is not only the first anhydrous ammonia plant for the Mountain States region, but is also the first installation of its kind in a major steel plant in this country. Raw coke oven gas is used as the source of hydrogen for ammonia synthesis.

This new facility will produce high quality fertilizers which are in wide demand. An annual total of over 100,000 tons of products will be available for shipment. This is a sizable volume on a regional basis, making the installation a significant addition to the expanding agricultural and processing industries of the Intermountain and Northwest areas.

Why not discuss your expansion plans—new plants or modernization of existing ones—with Blaw-Knox engineers? We welcome the opportunity to submit our recommendations.

### This new Geneva Works project includes:

1. A 200-tons-per-day anhydrous ammonia plant.
2. A nitric acid plant.
3. A fertilizer grade ammonium nitrate plant, producing both solid and solution forms of the product.
4. The necessary complement of auxiliary units, including administration and service buildings, utilities systems, warehouses and extensive handling, bagging, storage, and shipping facilities.



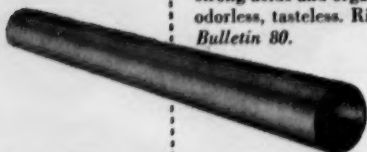
### BLAW-KNOX COMPANY

*Chemical Plants Division*

*Pittsburgh 22, Pennsylvania / Chicago 1, Illinois*

#### TOUGH ACE-ITE PLASTIC PIPE

General-purpose moderately priced rubber-plastic pipe handles most common chemicals to 170 deg. F. . . except few strong acids and organic solvents. Tough, odorless, tasteless. Rigid pipe 1/2" to 6". Bulletin 80.



#### VALVES

for all-plastic piping systems



Trouble-free plastic diaphragm valves . . . choice of general-purpose ACE-ITE, ACE PARIAN (polyethylene) or ACE SARAN. Handles most corrosive chemicals and food ingredients. Sizes 1/2" to 2", 50 psi. at 77 deg. F. Bulletins 80 and 351.

**ACE** chemical equipment

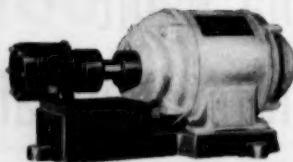
"more resistant to more corrosives"  
From this "super-market" of corrosion-resistant equipment backed by more than a century of engineering experience you can select with confidence



#### ACE-HIDE ACID PAIL

Practically indestructible

Its made of a new rubber-plastic material that's tough, resilient, suitable for handling most acids and alkalis. 3-gal. size. Easy-pour, drip-proof spout. Also 1-qt. and 2-qt. dippers, hard rubber bottles, etc. Write for name of nearest dealer.



#### MIGHTY MIDGET

for pumping acids

Jabco neoprene-impeller pump made of ACE hard rubber out-lasts, out-pumps anything in its pressure, size and price class. Capacity from 15 gpm. at 22 ft. head to 5 gpm. at 72 ft. head. Ask for free Bulletin 97.

#### SPECIALTIES . . . . .

manufacture. Tagged Witco 77-86, it is claimed to produce foams with virtually no odor.

• For industrial deodorization, Felton Chemical Co. (Brooklyn) has just put its Neutrosans and Neutralols on the market. The compounds are designed to cancel out unpleasant industrial waste odors.

• **Curly Trio:** Workers at Procter & Gamble's Ivorydale labs have come up with three new hair-waving solutions. John W. Haeefe has uncovered two of them (U.S. Pat. 2,719,813 -4), both water-soluble nontertiary mercaptans.

Judson Sanders (U.S. Pat. 2,719,815) favors an aqueous solution of a mixture of thioglycolic acid and dithiodiglycolic acid.

• **Hole Plugger:** An alginate treatment for concrete has been worked by Wilhelm Serkin for Rocla Pipes Ltd. (Melbourne, Australia). The process (U.S. Pat. 2,720,469) involves application of sodium or ammonium alginate to the concrete surface, where it reacts with the calcium present to form water-insoluble calcium alginate—which renders the structure resistant to passage of gases and liquids.

• **New Dandruff Factor:** Broadening its line, Max Factor & Co. (Los Angeles, Calif.) has a new product said to offer "relief from and control of dandruff and itchy scalp." Not yet introduced on a national scale, the product is being sold in southern California, Detroit and Chicago. Called Sebb, the preparation retails at \$1.50/8 oz. Marketing was next scheduled to move into Washington, Oregon, Arizona, Utah and Colorado, but the company reports this plan has been changed, won't say to what.

• **Something Extra:** International Mineral and Chemical Corp. is planning a \$94,200 addition to its fertilizer plant in Winston-Salem, N. C. The new facilities will be part of the mixing plant.

• **Pittsburgh Buy:** Pruett - Schaffer Chemical Co. has been purchased by Chase Chemical Corp. (both of Pittsburgh). Pruett-Schaffer, makers of railroad and industrial finishes, will be maintained as a wholly owned subsidiary, with no changes in personnel.

**ACE rubber and plastic products**

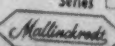
**AMERICAN HARD RUBBER COMPANY**  
93 WORTH STREET • NEW YORK 13, N. Y.



### PERIODIC CLASSIFICATION OF THE ELEMENTS

GROUP	I <sub>1</sub>	II <sub>2</sub>	III <sub>3</sub>	IV <sub>4</sub>	V <sub>5</sub>	VI <sub>6</sub>	VII <sub>7</sub>	VIII <sub>8</sub>	IX <sub>9</sub>	X <sub>10</sub>	XI <sub>11</sub>	II <sub>12</sub>	III <sub>13</sub>	IV <sub>14</sub>	V <sub>15</sub>	VI <sub>16</sub>	VII <sub>17</sub>	VIII <sub>18</sub>
1	(H)																	
2	Li	Be																He
3	Na	Mg																
4	K	Ca	Sc	Ti	V	(Cr)	(Mn)	(Fe)	(Co)	(Ni)	(Cu)	(Zn)		(B)	(C)	(N)	(O)	(F)
5	Rb	Sr	Y	Zr	Nb	(Mo)	(Tc)	(Ru)	(Rh)	(Pd)	(Ag)	(Cd)		(Al)	(Si)	(P)	(S)	(Cl)
6	Cs	(Ba)	La	Hf	Ta	(W)	(Re)	(Os)	(Ir)	(Pt)	(Au)	(Hg)						
7	Fr	Ra	(Ac)															

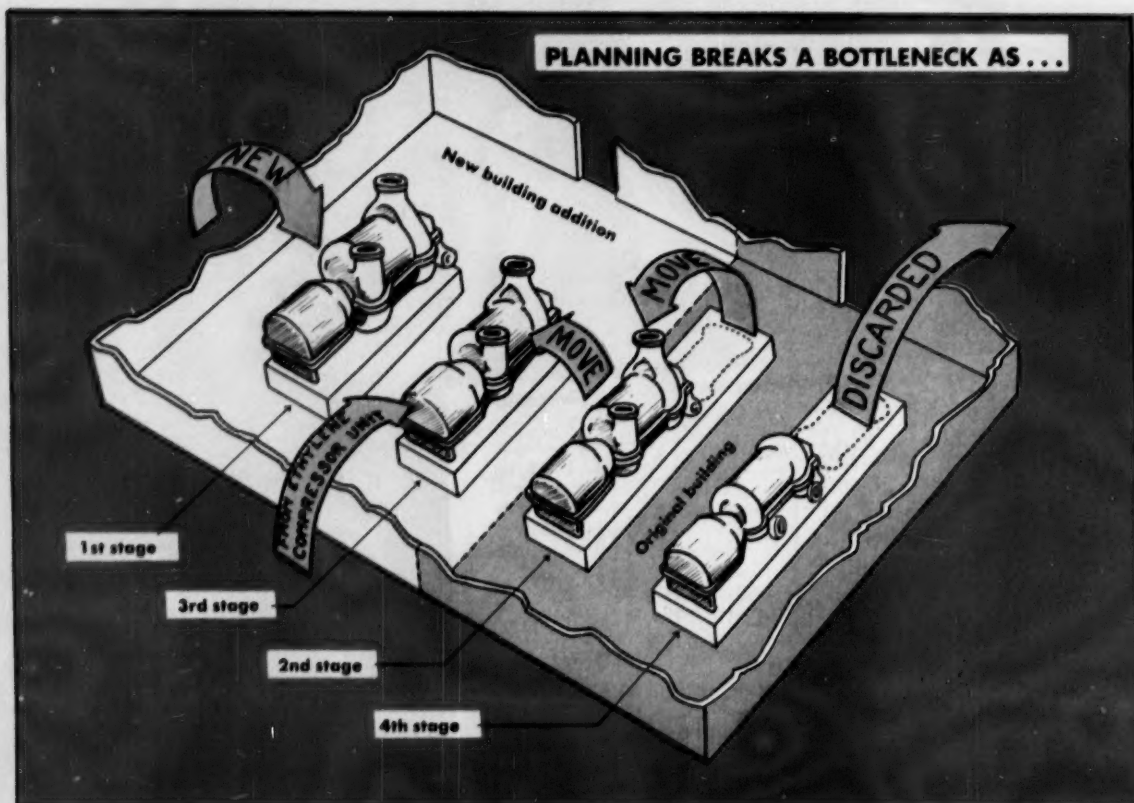
Rare Earths  
Ac Series

CALL ON  FOR COMPOUNDS OF THE CIRCLED ELEMENTS

That's the place to begin. You'll be surprised how much more smoothly the process goes, how much more dependable the end result. And—very often—you save money.

*Manufacturers of chemicals for industrial, medicinal, photographic and analytical uses*

MALLINCKRODT STREET, ST. LOUIS 7, MO. - 72 GOLD STREET, NEW YORK 8, N. Y.



## Compressors Play Musical Chairs

"Musical chairs," at least, is how National Petro-Chemical engineers refer to the recent revamping that boosted ethylene capacity at Tuscola from 300 to 350 tons/day. Actually, it was a carefully planned series of precision moves that permitted the dismantling, rebuilding and reassembling of the compressor station. But that's the way it had to be done, for downtime on such a plant is almost prohibitive, and they were working on a necessarily tight schedule.

Focal point of NPC's shutdown was the cracked gas compressor train—literally the heart of the plant—that supplies ethylene to Petro's polyethylene, ethyl chloride, and ethanol processes; and hydrogen to U.S. Industrial Chemical Co.'s neighboring ammonia plant. Production had reached the point where this compressor train, pushed to full capacity, was a bottleneck to further expansion.

The only remedy—complete re-

building of the unit—meant an interruption of production valued at many thousands of dollars per day. The major problem: how to accomplish the Herculean task in the allotted 10-day period.

The man responsible for organizing the over-all plan and coordinating the work of the several groups involved was NPC's assistant chief technologist, B. J. Anderson. With no leeway for second guessing or last minute field changes, he mapped out the 10-day job much as a general would plan a major campaign. His guiding principle: absolute attention to detail. Here's what the job entailed:

The groundwork was laid almost a year before the actual shutdown. When it became apparent that the old compressor unit hadn't the power or capacity to furnish expansion needs, Anderson, assisted by senior technologist E. C. Carlson and project engineer C. R. Fago, set up liaison

to coordinate the efforts of equipment suppliers, contractor and NPC's own engineering groups. Together, they decided what would have to be done.

**Musical Chairs:** A vital consideration of the plan was how best to utilize the existing equipment. The four centrifugal compressors, driven in tandem by two turbines, were still serviceable, but required rebuilding to increase their capacity. Too, the turbines could be used, but the tandem arrangement had to be replaced with individual drives to meet the increased power demand. The setup called for a new and larger first stage compressor, and a rearrangement—like a ponderous game of musical chairs—of the other huge machines.

Placement of the machines was more or less dictated by the location of other process equipment through which the gas passes between stages. The first stage takes in hot gas, at 10 psi., from the cracking furnaces,

delivers it to an absorber where heavy components are washed out by oil. From there the gas is further compressed in the second stage before the removal of acetylene by catalytic hydrogenation. Output from the third stage is delivered to an MEA absorber for the removal of carbon dioxide, after which it's compressed to 520 psi. and delivered by the fourth stage to a high pressure absorption-fractionation system for final purification.

NPC worked out the necessary engineering changes, contracted with J. F. Pritchard Co. for the piping design. Equipment design and engineering got under way at Carrier Corp. (Syracuse, N.Y.) and Terry Steam Turbine Co. (Hartford, Conn.).

Anderson then set up monthly meetings with staff engineers from Carrier and Terry to handle each problem as it arose, and finally to evolve the actual shutdown plan. Each job was considered in terms of the labor, materials and special skills required to complete it in the given time.

The success of the program depended on teamwork. Carrier Corp.'s contribution, which it describes as the most complete preparation ever made for a field rework job on centrifugals, was pieced into the general plan by engineers and service personnel who

traveled to Tuscola in relays.

On the actual rebuilding of the centrifugal compressors, for example, Carrier scheduled every move—from disconnecting the first machine right down to fastening the last bolt—in detail. A planning chart was prepared, listing work to be accomplished on each of the ten days. This chart enabled the supervising engineer to check job progress at a glance, and to take immediate corrective steps if it should happen to fall behind schedule.

The next step was preparation of a daily work sheet for each compressor. All of the operations were listed in chronological order. Alongside of each were noted the specific skilled labor and machines needed, and a close approximation of the length of time they would be required. In this way, all available tools and personnel were put together for maximum utilization of both.

Other measures were taken to guard against confusion and delays in the removal and replacement of the maze of internal parts from one centrifugal to another. As each compressor was disassembled, its rotor components, diffusers and guide vanes were color-coded according to their final position in the reassembled line-up. By this

method, workmen who were unfamiliar with part numbers and machine specifications were able to transfer all the parts to the proper destination quickly and correctly.

**Delegated Authority:** As the pre-shutdown planning went into its final stage, NPC completed the other necessary arrangements. Materials, including new and spare parts, and heavy moving equipment were gathered at the site. Plant personnel were trained on the details of the particular job for which each was responsible.

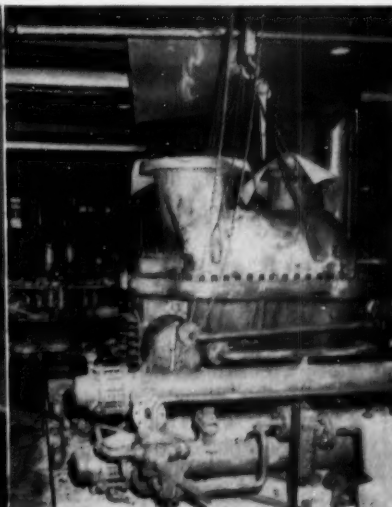
As production ground to a halt, shutdown coordinator E. P. Richards supervised execution of the over-all plan. And when ethylene operating superintendent J. R. Matthews had completed shutdown arrangements in the cracked-gas compressor unit, mechanical engineer R. T. Ball took charge of the complex moving and rebuilding work.

As a result of the efficient pre-work planning, the job was completed during the eighth day—a day and a half ahead of schedule. The compressors went back onstream without need of further adjustment and with no malfunction. And with the 50% increase in capacity, the new compressor unit can easily handle stepped-up ethylene production with something to spare.

**METICULOUS SCHEDULING** by NPC planners\* (left) smoothed the way for the massive compressor switch, assured on-time completion of the job for approval of inspection team† (right).

\* Left to right: Matthews, Richards, Anderson, Carlson, Fago, Ball.

† Left to right: Plant Mgr. J. W. Nixon, Ball, Machinist Foreman C. Waltermire.







Over a half century...  
SERVING INDUSTRY  
THROUGH CHEMISTRY



**LOMAR®**

**POWERFUL  
DISPERSING  
AGENTS**

If your manufacturing process calls for the dispersion of dyes, pigments, clays, graphite, mica, carbon black and other inert powders—you will be interested in the powerful dispersion properties of Lomar—a Naphthalene Sulfonic Acid condensate.

Used in cement, plaster, ceramics, in wet milling, in preparation of paint and asphalt emulsions, pitch and slime control in paper industries, for coagulation control of latex, in foundries and as auxiliary tanning compounds, for their high dispersing action.

The versatile Lomar series of dispersion agents are continuing to improve manufacturing processes and finished products in many diverse fields.

If you would like to know more about the LOMAR group, please write for a test sample and complete data sheet. No obligation, of course.

**JACQUES WOLF & CO.**  
*Chemicals* PASSAIC, N.J.

Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.



PRODUCTION . . . . .

## The Resins Are Expendable

What paper cups did for public drinking, Becco hopes its new expendable resin process will do for epoxidations. Basically, it's an in situ epoxidation catalyzed by an ion exchange resin. The unique feature is that the resin can be thrown away after one use, and the process can compete economically with those in which the resin is recycled. The trick, of course, is that it needs less catalyst, in the first place.

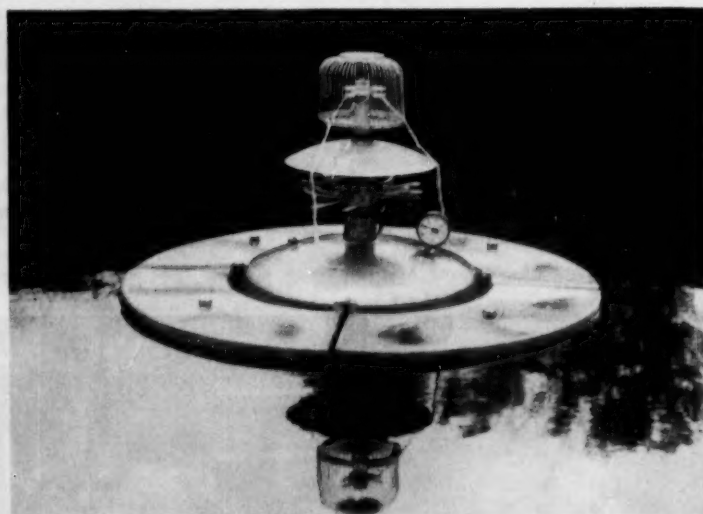
This is the background: Both Du Pont and Becco have been eagerly tracking down epoxidation processes for several years, in an effort to broaden the market for hydrogen peroxide. Last year, both companies developed *in situ* processes. Du Pont's depended on the use of a cation exchange resin (polystyrene sulfonic acid, for instance) along with glacial acetic acid and hydrogen peroxide (*CW*, Aug. 21, '54, p. 100).

Becco's process, on the other hand, called for the use of sulfuric acid, an

organic acid or a cation exchange resin (*CW*, Dec. 25, '54, p. 32). And actually, its latest process is an extension of that work. It found that superior yields of epoxy were obtained from polyunsaturated esters (like soybean oil) when the ion exchange resin was used as a catalyst.

The trouble with it was that a large amount of resin was needed to catalyze it. And that, in turn, meant that the resin had to be used. But the resin swells, is subject to oxidation and, if fines are present, causes difficulties in filtration. To get the cost of the resin down to 1¢/lb., Becco felt it would be necessary to re-use the resin 20 times. In the expendable resin process, it figures the once-through resin will cost only ½-1¢/lb. of finished product.

This is how it works: an unsaturated ester (containing 1 mole of ethylenic unsaturation) is dissolved in a half mole of acetic acid. A strong sulfonic acid cation exchange resin



## Saucers Fight Fire

THE APPARATUS above only looks like a flying saucer. Actually, it's a device for fighting fires recently put through its paces in Feltham, England. Floating on the surface of a liquid, it goes into action

as soon as a fire starts, spraying vaporized methyl bromide or chlorobromomethane from revolving jets.

It's made by the National Fire Protection Co. of Feltham.



*How to put a coating on cellulose...*  
*...and make it* **STICK!**

We're always looking for new and better ways to do things. Like making coatings and printing inks stick to cellulosic films even under humid or wet conditions.

Latest and best development in years of work with anchoring agents is ACCOBOND 3900 Resin, a cationic melamine resin. ACCOBOND 3900 gives topcoatings an unusually strong grip on cellulose films—a grip not readily weakened by moisture.

Its properties make it easy to apply. It's soluble in all proportions in water. Cationic in nature, it is strongly adsorbed on cellulosic films from aqueous solutions under neutral conditions. Therefore it can be applied before or in the softener bath. Excellent antiblocking properties forestall trouble on processing rolls. It is stable in storage, and to most common impurities.

You may find ACCOBOND 3900 Resin the ideal answer to your film coating or printing problems. It's well worth a try: write for our bulletin and a sample.

\*Trade-mark

**AMERICAN Cyanamid COMPANY**

MANUFACTURERS CHEMICALS DEPARTMENT

30 Rockefeller Plaza, New York 20, N.Y.

November 12, 1955 • Chemical Week

**AMERICAN Cyanamid COMPANY**  
 MANUFACTURERS CHEMICALS DEPARTMENT  
 30 Rockefeller Plaza, New York 20, New York

Dear Sirs:

Please send me

☐ Your bulletin on ACCOBOND 3900 Resin

☐ An experimental sample

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

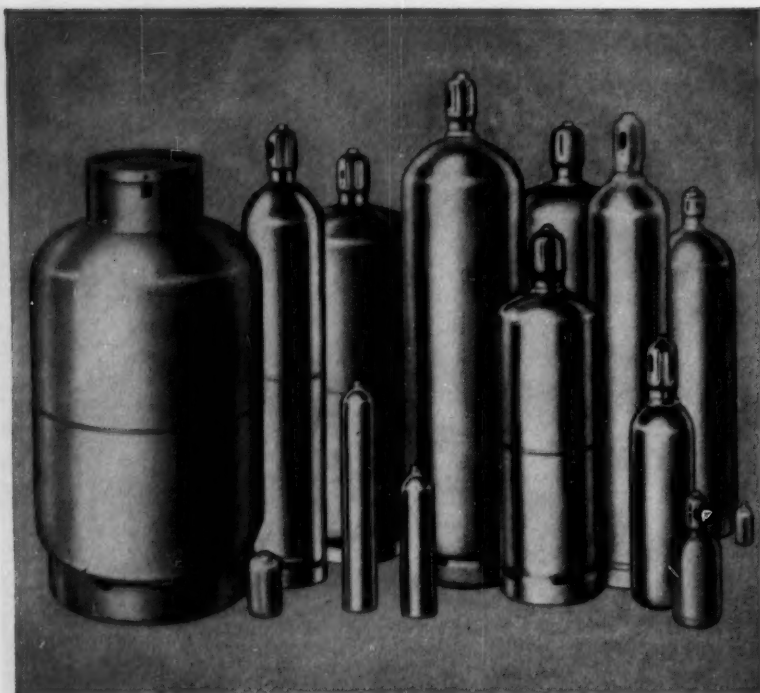
ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

ZONE \_\_\_\_\_

STATE \_\_\_\_\_

In Canada: North American Cyanamid Limited, Toronto and Montreal



## In all sizes...for all compressed gases Hackney seamless or two-piece cylinders

Hackney compressed gas cylinders are designed with low tare weight for easy handling and freight-saving shipping—either empty or filled. Yet adequate strength is always assured by the use of selected, high-grade steel. The Hackney manufacturing process draws the side walls to uniform thickness that eliminates unnecessary weight.

Hackney cylinders are uniform in size and weight—uniformly easy to handle—uniformly durable for long service with the busy chemical shipper. Made in many sizes—for high-pressure or low-pressure shipment of all types of gases. Write today for full details.

### Hackney cylinders are regularly furnished for shipping compressed gases such as:

Argon	Chloropicrin
Anhydrous Ammonia	Helium
Chlorine	Hydrocyanic Acid Gas
Refrigerant Gases	Sulphur Dioxide
Butane and Propane	Sulphur Hexafluoride
Carbon Dioxide	Anhydrous Hydrogen Chloride
Oxygen	Boron Trifluoride
Methyl Bromide	—and many, many others
Nitrogen	

Visit us at the Chemical Show—Booth 714

### Pressed Steel Tank Company

1448 S. 66th St., Milwaukee 14, Wis. • Manufacturer of Hackney Products

32 Vanderbilt Avenue, Room 2021, New York 17, N.Y. • 251 Hanna Bldg., Cleveland 15, Ohio • 936 W. Peachtree St., N.W., Room 134, Atlanta 3, Ga. • 208 S. LaSalle St., Room 794, Chicago 4, Ill. • 576 Roosevelt Bldg., Los Angeles 17, Calif. • 4550 W. Main St., Room 208, Kansas City 6, Mo. • 142 Wallace Ave., Downingtown, Pa.



CONTAINERS AND PRESSURE VESSELS FOR GASES, LIQUIDS AND SOLIDS

## PRODUCTION . . . . .

(2% of the weight of the acetic acid and hydrogen peroxide) is added. The temperature is raised to 60 C, the hydrogen peroxide is added (1.1 moles) and the mixture allowed to react for two hours at 60-65 C. After that, the temperature is allowed to rise to 75-80 C, until the reaction is complete. The product is washed, dried and filtered.

Suitable catalysts include Amberlite IR-20, Dowex 50X, Duolite C-25, Permutit Q.

And the entire procedure, as Becco points out, can be carried out in standard reactors. The only additional processing that's required is a filtration step, which very often is part of the refining step on the finished plasticizer, anyway.

## EQUIPMENT . . . . .

**Vacuum Gage:** The Autovac 1- to 4-station vacuum gage, developed by LKB-Produkter (Stockholm, Sweden), is now available from Consolidated Vacuum Corp. (Rochester, N.Y.). The instrument utilizes a self-balancing, resistance-bridge circuit that features automatic switching from the millimeter range (100—0.1 mm. Hg) to the micron range (100—1 micron Hg). Output operates a direct-reading meter, can also be used to actuate an external relay for automatic control purposes.

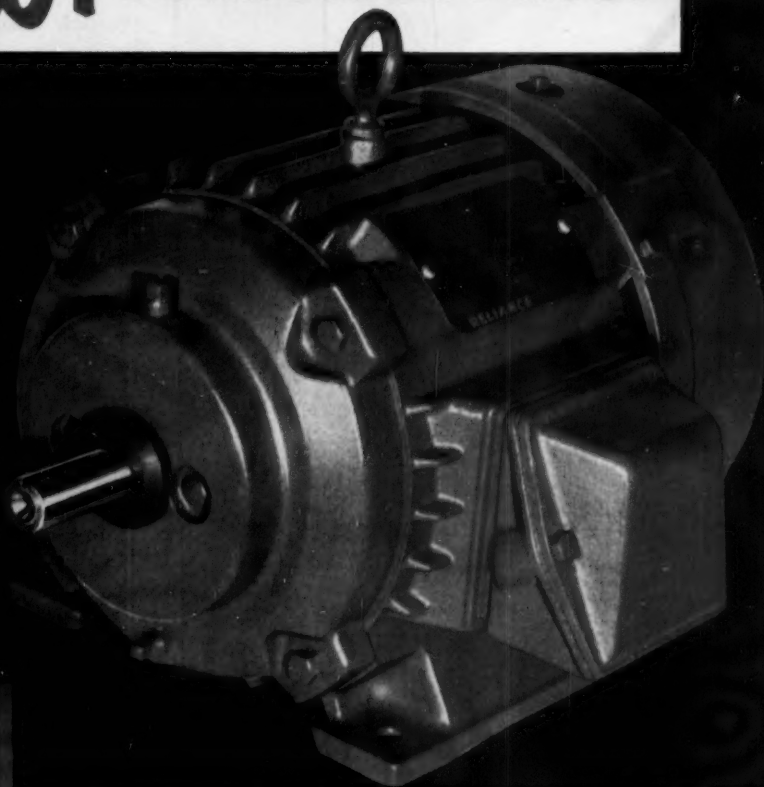
**Control by Conductivity:** For continuous measurement of solution strength, The Diversy Corp. (Chicago) offers a new heavy-duty electrode cell. Made of stainless steel and polyethylene, it's suitable for translating the conductivity of either acid or alkaline solutions into concentrations expressed in ounces/gallon, or in percent.

**Extended Couple:** A thermocouple—platinum-30% rhodium, platinum-6% rhodium—now available from Thermo Electric Co. (Rochelle Park, N.J.), measures temperatures to 3272 F. The new couple is said to retain all the sensitivity and corrosion resistance of lower-range platinum-rhodium combinations.

**Pollution Monitor:** A new oxidant recorder, developed by Standard Research Institute, is in production at Beckman Instruments, Inc. (Fullerton, Calif.). The instrument determines the concentration of atmospheric oxidants



Not Just CORROSION-RESISTANT  
**BUT CORROSION-PROOF**



Corrosion resistance is not enough to stop acids or alkalis from chewing up a motor in a hurry. That is why the wise engineer selects Reliance Corrosion-Proof Motors for corrosive service.

These motors are built to withstand the onslaught of destructive chemicals for years. Housings are made of virtually indestructible cast iron. Exterior contours are designed to slough off liquids—no nooks and crannies to retain corrosive elements. Enclosures are sealed to prevent any leakage . . . Metermatic lubrication systems provide complete protection against burned out bearings and contaminated lubricants.

Anyway you look at them, Reliance Corrosion-Proof Motors can take it—and you're not limited in the choice of motors either. A complete line of a-c. motors, 1 thru 300 hp., is available in all mountings, frequencies and voltages.

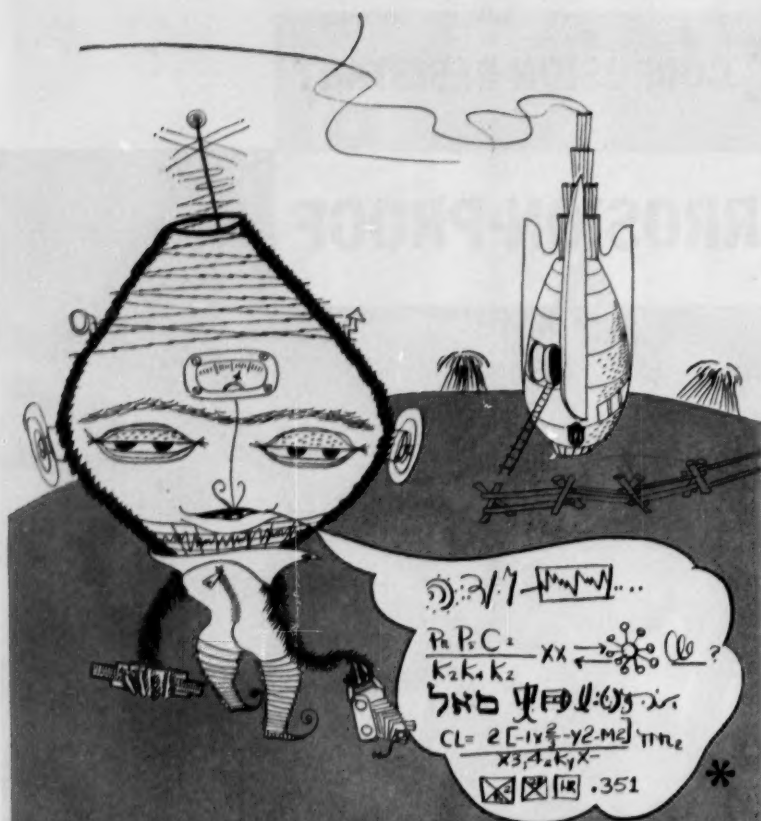
Why not call your Reliance representative today and get all the details.

B-1006



**RELIANCE** **ELECTRIC AND**  
**ENGINEERING CO.**

Cleveland 10, Ohio • Offices in Principal Cities  
Canadian Division: Welland, Ontario



**\* "You're so right! I-P-E is tops when it comes to pressure vessel design and fabrication."**

*(Note: I-P-E has come a long way, too . . . in the engineering, design and construction of process plants and equipment.)*



**INDUSTRIAL PROCESS ENGINEERS**

4 LISTER AVENUE • NEWARK 5, N. J.

## PRODUCTION . . . . .

by colorimetric measurement of their effect on a buffered potassium-iodine solution. It covers the range 0-80 parts per hundred million (accurate to 2 pphm.) ozone equivalent, records measurements on a strip-chart recorder.

**Portable Pump:** For safety in handling hazardous liquids, Vanton Pump & Equipment Co. (Hillside, N. J.) offers an air-motor-driven, self-priming chemical and slurry pump. The unit features explosionproof design, total elimination of stuffing box or mechanical seal, and one-way or reversible operation. It's made in plastic, rubber or stainless steel, for capacities to 20 gpm., pressures to 50 psi.

**Batch Centrifugal:** Completely automatic centrifugation is the aim of the vertical batch centrifugals just put on the market by Fletcher Works (Philadelphia). The Fletcher Pneumatic Unloader facilitates the unloading operation and, together with other pneumatically operated components, simplifies explosionproof requirements.

**Pressure Control:** Johnson Service Co. (Milwaukee, Wis.) is out with a new static pressure indicator-controller that permits high accuracy at ranges as low as 0-0.2 in. of water. Designated as Model R-1051, the instrument can be used to maintain static or differential pressures in ranges from 0-0.2 to 0-6 in. of water.

**Ball Ceramics:** High-precision ceramic balls are now being manufactured by Industrial Tectonics, Inc. (Ann Arbor, Mich.). Made of synthetic and natural ceramics, such as aluminum silicate, magnesium silicate, titanium dioxide, and aluminum oxides, they're available in standard or special sizes from 1/4 to 4 1/2 in.

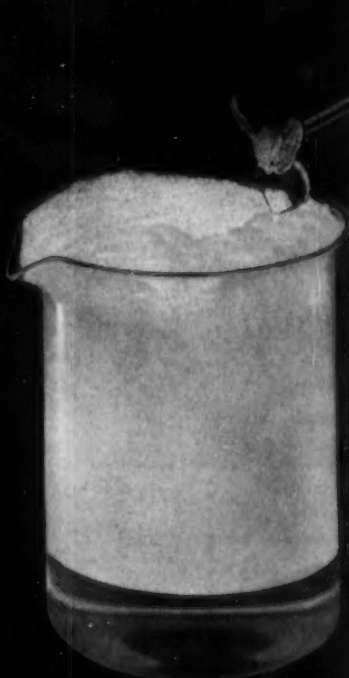
**Airlock Feeder:** Prater Pulverizer Co.'s (Chicago) Blow-thru Rotary Airlock Feeder is out in a new design that's said to permit faster, more positive feeding of powdered or granular products. Working as a seal to sustain differential pressures, the airlock also facilitates the discharge of materials from bag filters, spray dryers, dust collectors, etc.

**Centrifugal Pump:** Ingersoll-Rand Co. (New York City) describes its

# Agitation without foam with **TRITON CF-10**



DETERGENT BASED ON TRITON CF-10 keeps suds under control when added to water and violently agitated.



CONVENTIONAL DETERGENT develops excessive foam when added to water and violently agitated.

With TRITON CF-10, formulators can now build "low suds" compounds that won't foam appreciably no matter how turbulent the spraying, tumbling, or mixing action. The test shown above confirms this. The detergent based on TRITON CF-10 held the low "suds line" even though violently agitated at 7,000 RPM's by a laboratory mixer!

TRITON CF-10 is equally outstanding for its detergent properties. In fact, this non-ionic surfactant effectively removes soil even from hard-to-clean plastic ware. It also improves rinsing and serves as a dedusting agent. What's more, it's economical. Only small amounts are

needed in combination with alkaline builders and other detergents.

With its low foaming, high detergency action, TRITON CF-10 can lead to big improvements in automatic dishwashing compounds. It also promises improved performance for laundry, dairy, and metal cleaning compounds.

TRITON CF-10 is available in commercial quantities. For samples or typical formulations, see your Rohm & Haas representative or write direct.

TRITON is a trade-mark, Reg. U.S. Pat. Off.  
and in principal foreign countries.



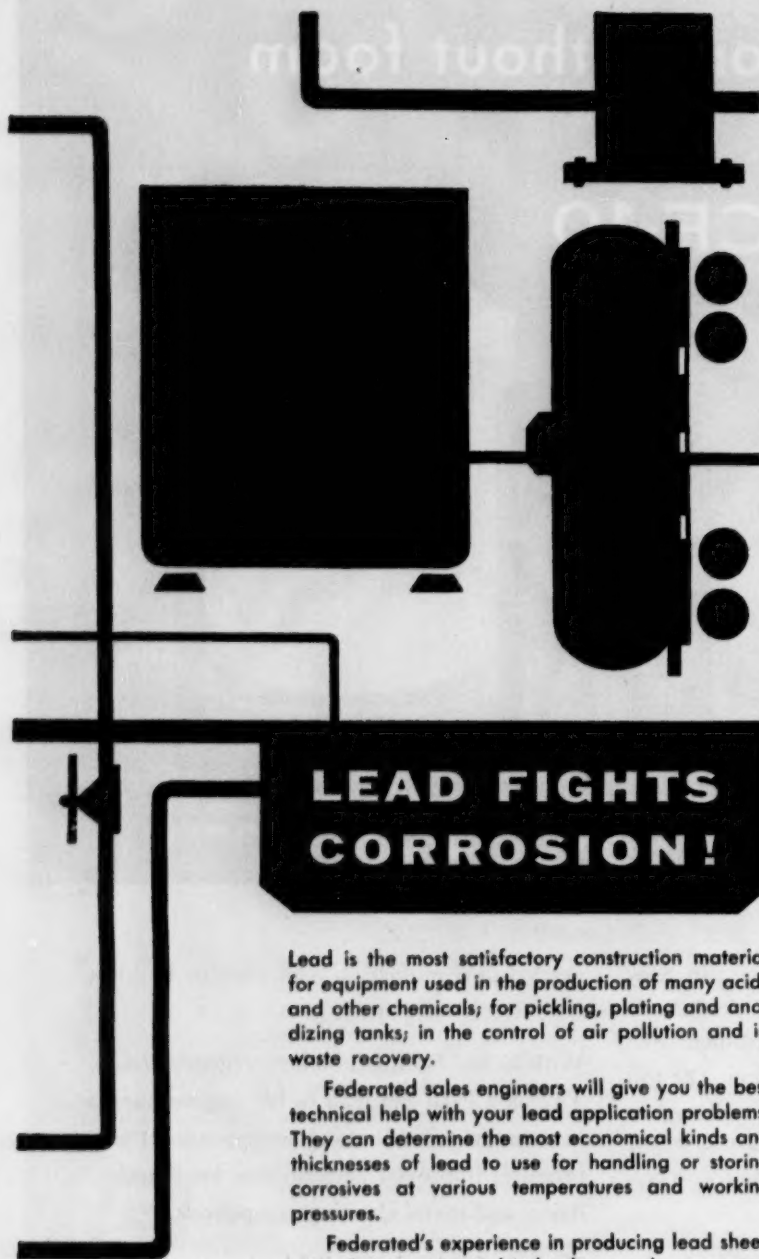
*Chemicals for Industry*

**ROHM & HAAS  
COMPANY**

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

*Representatives in principal foreign countries*





## LEAD FIGHTS CORROSION!

Lead is the most satisfactory construction material for equipment used in the production of many acids and other chemicals; for pickling, plating and anodizing tanks; in the control of air pollution and in waste recovery.

Federated sales engineers will give you the best technical help with your lead application problems. They can determine the most economical kinds and thicknesses of lead to use for handling or storing corrosives at various temperatures and working pressures.

Federated's experience in producing lead sheet, pipe, fittings, etc., and in lead research, means you will get a product as good as any available; we believe much better!

For any information on the use of lead and lead products, write to Federated's Corrosion Advisory Service at the address below or at any of Federated's 13 plants and 23 sales offices across the nation. Or send for Bulletin No. 162, Lead Handbook for the Chemical Process Industries.



### Federated Metals

DIVISION OF AMERICAN SMELTING AND REFINING COMPANY  
120 BROADWAY, NEW YORK 5, N. Y.

In Canada: Federated Metals Canada, Ltd., Toronto and Montreal  
Aluminum, Magnesium, Babbitts, Brass, Bronze, Anodes, Zinc Dust,  
Die Casting Metals, Lead and Lead Products, Solders, Type Metals

## PRODUCTION . . . . .

new paper stock and industrial liquids pump as the first real departure from conventional centrifugals. The pump is designed to handle liquids containing high concentrations of solids, air and gases at capacities of 200-7,000 gpm., at heads of 5-225 ft. The key to its self-venting, self-regulating operation is a diverging-type impeller that has a much greater area at the discharge than at the inlet.

**Differential Pressure:** Three pressure chambers mounted on a fulcrumed beam enable Hagan Corp.'s (Pittsburgh, Pa.) Delta "P" Transmitter to convert pressure differences of up to 300 psi. into a single pneumatic output. It's suitable for use with high-pressure multistage hydraulic pumps, handles static pressures up to 3,000 psi.

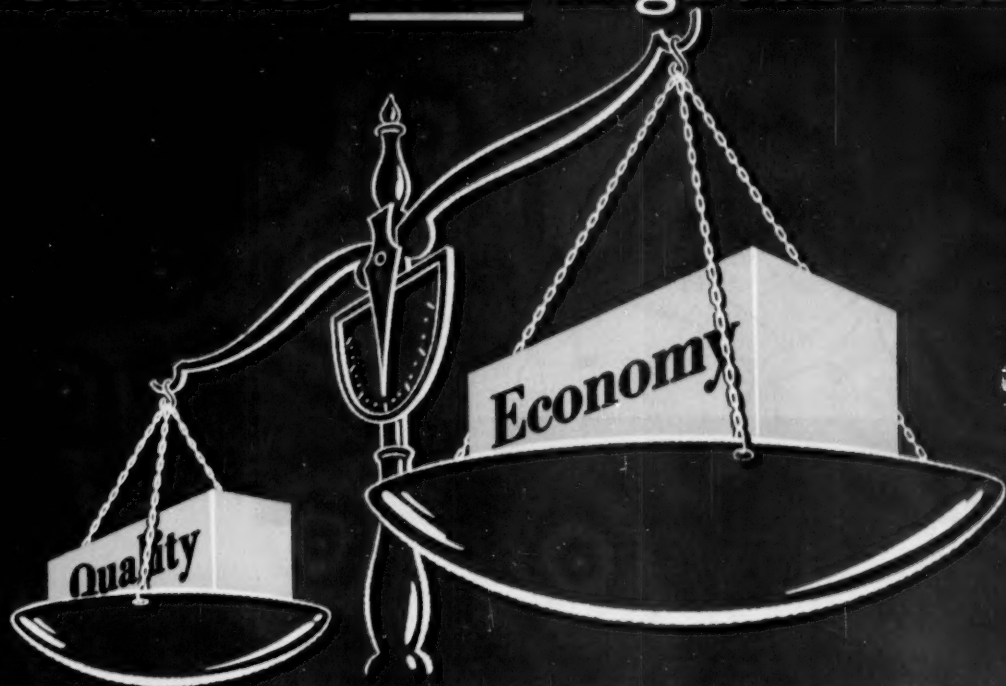
**Solvent Recovery:** Struthers Wells Corp. (Warren, Pa.) has developed a new distillation unit for solvent reclaiming operations. The still provides either batch or semicontinuous processing, comes in five standard sizes in capacities to 300 gph.

**Sturdy Plastic:** Aeroflex "P" is a crack-resistant formulation of polyethylene put out by Anchor Plastics Co. Inc. (Long Island City, N.Y.). Extruded to specification in tabular, rod or strip form, it's expected to find application in industrial feed lines, gaskets, and other products that are subject to severe stress.

**Radiation Shield:** Knapp Mills, Inc. (Wilmington, Del.) is out with a new type of radiation-shielding brick known as Raysist Shielding Logs. Shield walls are constructed by stacking the units vertically, can be made to follow any geometric path by rotating each crescent-shaped log on its axis. The logs effectively eliminate both horizontal and vertical radiation leakage, says Knapp, require fewer pieces for a given wall.

**Mass Flowmeter:** Potter Aeronautical Co. (Union, N.J.) has a new extended-range mass flowmeter that's said to be capable of measuring "any clean fluid having a reasonably low viscosity." Accuracy is claimed to be within 1/2% of full-scale for each of the five scales used to cover the entire range.

# You need both ingredients



**KETONE LACQUER SOLVENTS**  
give complete flexibility in formulating,  
improved quality . . . and a price advantage, too!

**K**etone-based solvent systems are inherently superior for lacquer formulations because of their high solvency for both nitrocellulose and vinyl resins.

High-purity ketones yield solutions of exceptionally high solids content, or permit greater diluent content . . . with either aromatics or aliphatics. In any formulation, ketones impart excellent flow, blush resistance and gloss.

Still another important advantage—the low specific gravity of ketones favors *you* when you buy by the pound and sell by the gallon.

The Shell Chemical “quality group” of solvents includes MEK, MIBK, EAK, MIBC, IPA and Ethyl Alcohol.

Ask your Shell Chemical representative to help you evaluate ketones for your own formulations.

## **SHELL CHEMICAL CORPORATION**

**CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE**

380 Madison Avenue, New York 17, New York

Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco • St. Louis  
IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver





## FABRICS RESISTANT TO CHEMICALS

yet with pleasing drape

There may be good news soon for the working girl who is exposed in the course of her job to corrosive materials. In the past she had to wear heavy protective garments—or else risk damage to her regular clothing.

Now a new coating for nylon fabrics has been developed. It makes these light, attractive fabrics highly resistant—yet they retain their pleasing handle and drape. They also show unusual freedom from cracking or crazing when creased—even at very low temperatures.

This remarkable, patented\* film is produced by applying a composition of several organic chemicals, including an organic polyisocyanate and a polyester of *Glycerine*.

The unique balance of properties that won such wide acceptance for *Glycerine* in the past continues to open new doors to chemical progress. In paints, foods, pharmaceuticals, packaging . . . for tomorrow's surge of new specialties . . . in formulations and reactions yet unknown, nothing takes the place of *Glycerine*.

\*U. S. Patent No. 2,676,164

This balanced group of properties keeps

# Glycerine's

usefulness growing

HYGROSCOPICITY • STABILITY •  
SOLVENT POWER • VISCOSITY • NONVOLATILITY •  
NONTOXICITY • TASTE • MW/HYDROXYL RATIO •

HUMECTANT •  
CARRIER • SOLVENT • LUBRICANT • SOFTENER •  
EMOLLIENT • ANTI-FREEZE • ALKYD BASE •

☒ CHECK AND SEND FOR TECHNICAL DATA



☐ 20-page booklet on  
Glycerine for product  
conditioning



☐ 8-page folder, "Federal  
Specifications  
— Glycerine."



☐ 16-page booklet on  
Glycerine properties  
and applications

For your free copy of any or all of these booklets write GLYCERINE PRODUCERS' ASSOCIATION • 295 Madison Ave., New York 17, N. Y.



# Technology

## Newsletter

CHEMICAL WEEK

NOVEMBER 12, 1955

Look for word soon that another company has licensed the Phillips process of making linear polyethylene (in addition to Grace, Carbide and Celanese). You can expect to hear also about activity in France concerning both Ziegler and Phillips polyethylene.

You'll be hearing rumblings about last week's decision by U.S.I. to commercialize its isosebacic acid with a 10 million lbs./year plant at Tuscola, Ill. Here's why:

The company says that Tuscola was picked as the site because of the availability of raw materials—hydrocarbons from its affiliate, National Petro-Chemicals (owned by National Distillers and Panhandle Eastern), sulfuric acid and "other raw materials" from the adjacent U.S.I. installation there. Further, it says that raw materials include butadiene, sodium and sulfuric acid. It doesn't take an advanced course in logic to conclude that National Petro-Chemicals is going to put up a butadiene plant. The trade, incidentally, had just about arrived at the same conclusion—merely by studying the economics of the operations.

U.S.I. isn't talking about the process other than to say it's a novel one. Just about a year ago, however, it received a French patent (1,093,096) that spells out a process that would fit right in with the project:

The first step is essentially a dimerization of the butadiene with sodium to form an eight-carbon-atom product with a sodium atom on each end. That's reacted with carbon dioxide to form the sodium salt of a 10-carbon-atom dicarboxylic acid. Sulfuric acid converts the salt to acid.

There are several possible reactions in the original dimerization, and that's why the product is actually a mixture of 10-carbon-atom isomers. (Isebacic consists of 72-80% 2-ethylsebacic acid, 12-18% 2,4-diethyladipic acid, 6-10% sebacic acid.)

The needed carbon dioxide could be the by-product from a new natural gas reforming unit U.S.I. has just installed in order to obtain more hydrogen to keep its ammonia production going full tilt. Its hydrogen-for-ammonia has been coming from the cracking of ethylene (*see p. 66*). This new supply will be a supplementary one.

A better picture of the future for so-called "synthetic natural" rubber emerged last week.

At the annual meeting of the American Chemical Society's rubber division in Philadelphia's Bellevue-Stratford Hotel, Frank Schoenfeld—B. F. Goodrich vice-president for research—reported that the new synthetic was virtually identical to tree-grown hevea rubber in performance tests.

Schoenfeld is talking about Amerinol SN—cis-1,4-polyisoprene—put together by Goodrich-Gulf with catalyst information purchased from Karl Ziegler. From his researchers' data, it's reasonable to assume that the material is a fully adequate stand-in for natural rubber in heavy-duty tires. Factory evaluation and road testing allegedly bear this out.

Goodyear, which also uses a Ziegler-type catalyst for its "synthetic natural," isn't far enough along with evaluation to say how closely the product resembles hevea.

## Technology Newsletter

(Continued)

But Research Vice-President Ray Dinsmore did provide process sleuths with one of their first tangible clues. His description of the successful catalyst: a solid suspension made by combining triethyl aluminum with a co-catalyst under conditions "that appear to be quite critical."

Firestone, another "synthetic natural" developer, is reported to use a decidedly non-Ziegler solid alkali metal catalyst.

**The probability of developing an effective vaccine** for the common cold became somewhat greater last week, with the arrival of a preventive for a "cold-type" disease. Developed by a seven-man team of researchers from Johns Hopkins and U.S. Public Health Service, the agent is reported to act against one of ten gripe viruses.

Known as type-three vaccine, it was tested on groups of prisoners at state reformatories at Chillicothe, Ohio, and Breathedsville, Md. Only 29% of vaccinated prisoners came down with gripe after exposure to type-three virus, while 90% of the unvaccinated became ill.

**Public Health Service officials see no prospect** of the vaccine becoming widely available in the near future. But several drug companies are said to be drafting plans for production.

**Solar scientists gathered last week in Phoenix and Tucson, Ariz.** (for the World Symposium on Applied Solar Energy) had plenty to ask of the chemical industry, but little to give.

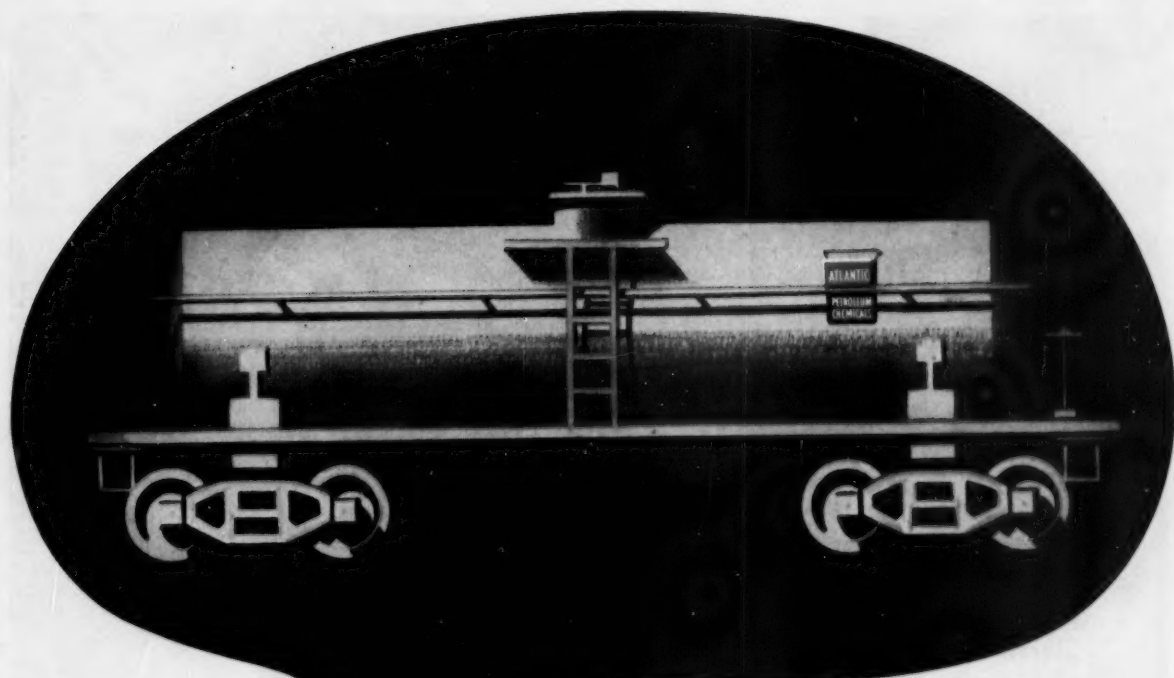
To realize their dream of practical solar space heating, power generation, etc., they demand spartan structural materials: rigid, low-cost, lightweight, resistant to weathering, and possessing high reflectivity (for reflectors) or low emissivity (for collectors).

Few display much zeal for hitching chemical processes to the sun. Exceptions are Cairo University's Alexander Schoenberg, whose photosyntheses of organics captured the imagination on symposium delegates; and operators of Algerian government-sponsored solar furnaces that reportedly have fixed atmospheric nitrogen and fused aluminum silicate—the latter supposedly on a commercial basis.

**Maybe you can't be a hero to your valet, but you will make a big hit** with your secretary if you let her start now making reservations for next month's (Dec. 5-9) Chem Show. Here, incidentally, are a few of the things you should bear in mind when making plans:

- The exposition will not—as in previous years—be open on Saturday. And it will be open only two nights, Monday and Thursday. Other big evening events during the week will be the American Chemical Society dinner (Tuesday night) and the Chemical Engineering Achievement Award dinner (Wednesday night). Speaker for former: Kevin McCann, consultant to President Eisenhower. General John Hull, president of the Manufacturing Chemists' Assn., will talk at the latter on "Leadership—the Key to Industrial Development."

- The best way to get a hotel reservation is through the Housing Bureau of the Philadelphia Convention and Visitors Bureau (Architects Bldg., 17th and Sansom Sts.). You can, of course, state preferences in hotels.



## HOW TO CUT COSTS ON DETERGENTS

More and more consumers are making substantial savings on their purchases of alkyl aryl sulfonates by specifying Atlantic Ultrawets in bulk quantities.

Bulk purchases call for storage facilities. Atlantic has developed suggestions to help you. They include alloys, coatings, equipment, piping layout, and estimated costs.

Atlantic is ready to offer on-the-spot assistance to help you with your bulk storage problems.

Write for information on your company letterhead regarding suggested bulk storage facilities for liquid Ultrawets. The Atlantic Refining Company, Dept. H-11, Chemical Products Sales, 260 S. Broad Street, Philadelphia 1, Pa.



Philadelphia, Providence, Charlotte, Chicago

In the West: L. H. Butcher Co.

In Canada: Naugatuck Chemicals Division, of Dominion Rubber Company, Ltd.

In Europe: Atlantic Chemicals S.A.B., Antwerp, Belgium

The ULTRAWETS wet,  
penetrate, clean, emulsify



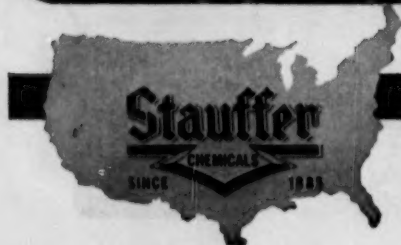
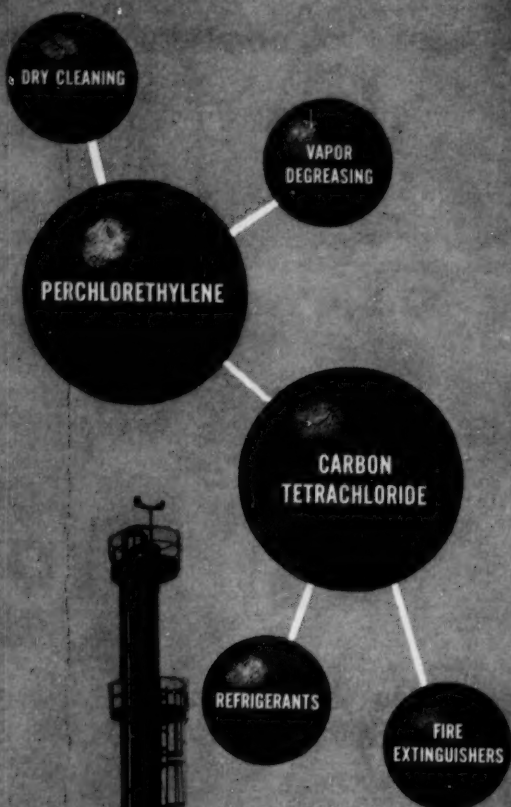


MIXING THE **"HEAVY"**  
WITH THE **"FINE"**

Stauffer's manufacturing processes are geared to give you "heavy" chemicals with "fine" chemical purity.

For example, Stauffer's plant at Louisville, Kentucky, designed and equipped in accordance with the latest in technological advancements, produces PERCHLORETHYLENE and CARBON TETRACHLORIDE of the highest quality to meet the demands of many industries.

In manufacturing over 50 chemicals in 38 plants, Stauffer maintains standards of high purity for every product. Stauffer Chemical Company, 380 Madison Avenue, New York 17, N. Y.; sales offices in the principal cities.



38 Plants to serve you... Coast-to-Coast!

**STAUFFER CHEMICALS**

## Behind Goodrich's Synthetic Fiber: The New Technology of Vinylidene Cyanide \*

### 1 Precursor

1-acetoxy-1,1-dicyanoethane.	Brit. 680,971
	US 2,574,234
(eg. by reaction of acetic anhydride, HCN).	US 2,623,062

### 2 Preparation

by pyrolysis of 1-acetoxy-1,1-dicyanoethane.	US 2,476,270
	Brit. 653,468
	Ger. 875,349
from methylenedimalononitrile and P <sub>2</sub> O <sub>5</sub> or SO <sub>2</sub> by pyrolysis of 4,4-disubstituted cyclohexenes.	US 2,502,412
	Brit. 667,276
by pyrolysis of 1,1,3,3-tetracyanopropane.	US 2,514,387
	Brit. 673,722
by pyrolysis of diacyl cyanides.	US 2,663,725
	US 2,663,726

### 3 Stabilization

by treatment with gaseous sulfur dioxide.	US 2,535,861
with pyrogallol, picric acid, trinitrobenzene.	US 2,614,117
with liquid aromatics such as benzene, toluene.	US 2,614,118
	Brit. 687,020

### 4 Polymers

prepared by heating benzene solution of monomer in presence of catalyst; they are hard, tough, clear, stable to heat and corrosive chemicals.	US 2,589,294
---	--------------

### 5 Polymer Stabilization

with tetramethylene sulfone (treated with SO <sub>2</sub> ).	US 2,548,169
	Brit. 672,417
stable solutions containing tetramethyleneurea.	US 2,574,369
with acetic or succinic anhydride.	US 2,614,099

\* All patents assigned to B. F. Goodrich, except where otherwise specified.  
† And also Brit. 683,655; Brit. 681,120 encompasses US 2,615,865-71 and US 2,615,874-7.

### 6 Copolymers and Interpolymers

with olefins—eg. styrenes.	US 2,615,868
with iso-olefins—eg. isobutylene.	US 2,615,865
with propylene, prepared under pressure.	US 2,615,874
with halo-olefins—eg. vinylidene chloride.	US 2,615,870
with vinyl chloride.	US 2,615,869
with 2-halo-olefins—eg. 2-chloropropene.	US 2,615,877
with 1,2-dihaloethylenes—eg. dichloroethylene.	US 2,615,878
with aliphatic conjugated dienes—eg. 1,3-butadiene.	US 2,615,873
with halogenated 1,3-butadienes.	US 2,615,872†
with acrylates.	US 2,615,880
with alkyl methacrylates.	US 2,615,871
with alkyl a-haloacrylates or cyanoacrylates.	US 2,615,879
with vinyl esters of alkanolic acids—eg. vinyl acetate.	US 2,615,866†
with vinyl esters of aromatic acids.	US 2,615,867
with isopropenyl esters—eg. isopropenyl acetate.	US 2,615,875
with vinyl esters of a-halo monocarboxylic acids.	US 2,615,876
with acrylonitrile.	US 2,628,954
with alkylvinyl ketones.	US 2,654,724
with difluorodichloroethylenes.	US 2,654,728
with unsaturated aliphatic carboxylic acids.	US 2,657,197
with alkenyl esters of monobasic acids.	US 2,650,911
with two conjugated aliphatic dienes.	US 2,716,104
with a conjugated diene and a mono-olefin.	US 2,716,105
with two mono-olefins.	US 2,716,106

### 7 Fiber Spinning Solutions

alkyl phosphates.	US 2,594,353
dialkyl cyanamides.	US 2,600,180

### 8 Waste Recovery

polyvinylidene cyanide fiber waste converted to monomer by pyrolyzation.	US 2,535,827
fiber waste depolymerized by heating.	Brit. 677,825

† US 2,466,395, assigned to Eastman Kodak, includes a copolymer of vinyl acetate and methylene malononitrile (ie. vinylidene cyanide). US 2,707,805 (to Dow) describes films and fibers from vinylidene cyanide polymer latexes.

## Ninth Step—Off to Market

Poised on the threshold of commercialization (CW Technology Newsletter, Oct. 22), the Goodrich synthetic fiber this week is still somewhat of an enigma. But the mantle of mystery is slipping, despite official disclosure only of the fiber's name (Darlan), chemical nature (dinitrile polymer), production status (pilot plant) and first commercial use (women's pile coats).

A wealth of information concerning Darlan is spattered through the patent literature. Vinylidene cyanide\*

\* Also known as 1,1-dicyanoethylene and methylene malononitrile.

is the key to this repository.

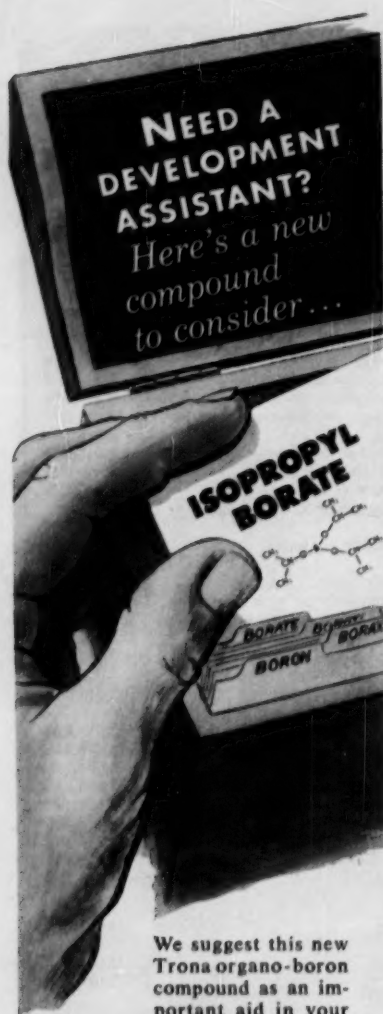
Vinylidene cyanide polymers, prepared by heating a benzene solution of the monomer in the presence of a catalyst (e.g., *p*-methoxybenzene naphthyl sulfide), are revealed to be hard, tough, clear, and resistant to heat and chemicals. Filament produced from these materials (alkyl phosphates and dialkyl cyanamides are useful as spinning solutions) has shown a tensile strength of 51,000 psi.

Filaments may be produced also from copolymers of vinylidene cyan-

ide and vinylidene chloride, 1,3-butadiene, alkyl methacrylates, vinyl acetate, acrylonitrile, alkylvinylketones, difluorodichloroethylene, allyl esters of monobasic acids.

Copolymers with butadiene are suitable for melt-spinning, while those containing alkyl methacrylates, acrylonitrile, and allyl esters may be spun from solvents (mainly dimethylformamide). Vinyl acetate-vinylidene cyanide copolymers are amenable to either melt- or solvent-spinning.

Softening points of these copolymers range from 135 to 250 C. Most are produced by use of peroxide catalysts.

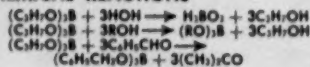


We suggest this new Trona organo-boron compound as an important aid in your current or future research and development studies. Available in drum quantities for the first time.

#### PROPERTIES

Molecular weight: 188.08  
Percent boron: 5.75  
Boiling point: 139-140°C @ 760 m.m.Hg.  
Density: 20°/4°C—0.825 gms./ml.

#### CHEMICAL REACTIONS



Write today for technical information—  
Sales Development Department



**American Potash &  
Chemical Corporation**

3030 West Sixth Street  
Los Angeles 54, California  
99 Park Avenue, New York 16, New York

## RESEARCH . . . . .

Although Darlan is predominately polyvinylidene cyanide, its precise composition is a secret. Theoretically, any one of a host of the above (or other) copolymer-forming compounds might be included.

**No Limits:** No secret, however, are potential applications. According to the company, the new synthetic "can be adapted for almost every type of wearing apparel, ranging from sweaters and knit goods to coats and suits."

Output of the Avon Lake pilot plant has been processed into sweaters and men's suits and overcoats, by Hickey-Freeman and Brooks Broth-

ers. Produced for evaluation, these garments were worn by a hand-picked group of Goodrich employees who periodically turned them in for testing—a technique that is also being employed by American Cyanamid in evaluating Creslan (*CW, Technology Newsletter, Oct. 8*).

A hefty potential market exists also in furlike women's pile coats (*see box below*). Borg Fabric Div. of George W. Borg Corp. (Rockton, Ill.) has reportedly produced a Darlan pile fabric that is even more furlike than the Orlon-dynel blend now used in most such coating material. In Good-



## Fibers for the Lady in Synthetic Fur

AN IMPORTANT NEW force in synthetic fiber development is the rising star of deep-pile fabrics. Manufactured by Princeton Mills, Collins & Aikman, Borg Fabric and others, under several trade-names—e.g., Borgana (Borg), O'legro (Princeton), Cloud 9 (Collins & Aikman)—furry synthetic fabrics will go into about 500,000 coats (at \$75-150/coat) this year, an estimated 750,000 coats in 1956, with further in-

creases in the offing\*. Two acrylics—Du Pont's Orlon, Carbide's dynel (used as a blend)—account for the bulk of this trade. But it's known that aside from Goodrich, American Cyanamid and Tennessee Eastman are evaluating their embryo acrylics (Creslan and M-24, respectively) in pile fabrics. Acrilan, too, is a factor here.

\*A certain sign that deep pile coats have "arrived," according to textile men, is the planned appearance of these garments on the cover of the new Montgomery Ward catalog.



# Your best assurance for a *continuous* supply is a completely integrated supplier!

Kraft Bag Corporation  
owns and operates  
the most complete  
integrated  
manufacturing  
unit in the industry.

Check this chart  
and see  
for yourself  
why  
Kraft Bag  
Corporation  
should be  
your supplier.

Tell us what  
you need  
to do  
and we'll  
do it for you.



FEATURES	KRAFT BAG CORPORATION	OTHER SOURCES ?
Forest Lands	✓	
Pulp Mill	✓	
Bleach Plant	✓	
Paper Mill	✓	
Multiple Bag Plants	✓	
Natural Kraft	✓	
Colored Kraft	✓	
Bleached Kraft	✓	
Creped Kraft	✓	
Wax Laminated Kraft	✓	
Asphalt Laminated Kraft	✓	
Wet-Strength Kraft	✓	
Water Repellent Kraft	✓	
Stak-LOK Super Rough Kraft	✓	
Valve Bags—sewn or pasted	✓	
Open Mouth Bags—sewn or pasted	✓	
Flat Sewn Valve Bags	✓	
Flat Sewn Open Mouth Bags	✓	
KRAFT-lok Valve Closure	✓	
Creped Tape	✓	
Gummed Tape	✓	
Filter Cord	✓	
Sewing Thread—(the only material we do not produce ourselves)		
1-2-3-4 Color Printing	✓	
Art Department	✓	
Bag Development and Research	✓	

## KRAFT BAG CORPORATION

Gilman Paper Company Subsidiary

200 Madison Avenue, New York 26, N. Y. • Daily News Bldg., Chicago 6, Ill.

100 St. Marys, Georgia and Gilman, Vermont

PLANT SITES ON THE

**B&O**

IN THE LAND OF

**BIG OPPORTUNITIES**



ANOTHER MULTI-MILLION DOLLAR INDUSTRY  
PICKS B&O'S AMERICAN RUHR! HOW  
ABOUT YOUR NEW PLANT HERE, TOO?

### Industry's Pull is toward the Ohio

B&O's locating a 2500 acre site for a mammoth aluminum sheet and foil mill near Ravenswood, West Virginia further underscores the trend toward *this land of Big Opportunities*. A billion dollars in recent new plants proves it!

Here's a land of *big sites*, atop extensive natural resources, with an abundance of power and people, close by America's prime markets. You know about the big, basic plants already in the area—smaller neighboring sites, too, are ready! The Nation's first ISOCYANATE plant, at Natrium, just announced, located on one of them.

We want your plant here! B&O has "know-how" on location and sites. Look them over!—on the ground, or at your desk with our new airviews plus 3-dimensional color. *Ask our man!*

Contact B&O plant location men at:

New York 4	Digby	4-1600
Baltimore 1	LExington	9-0400
Pittsburgh 22	COurt	1-6220
Cincinnati 2	DUnbar	1-2900
Chicago 7	WAbash	2-2211



**BALTIMORE & OHIO RAILROAD**

Those who **KNOW** use the **B&O**  
Constantly *doing things—better!*

## RESEARCH . . .

rich's initial commercial sortie with Darlan, about 5,000 coats of this pile fabric will soon be retailed through ten carefully selected stores.

Afield from apparel but not to be overlooked are the distinct outlines of a sizable demand in the auto industry. Auto makers that have been shown the fiber see a future for it in seat upholstery. But they're not talking business until production is on a more generous footing. One possible short-term answer for Goodrich: a licensing arrangement with companies that would make fiber for this trade. Otherwise, the company will probably have to mark time in this area until volume production gets under way.

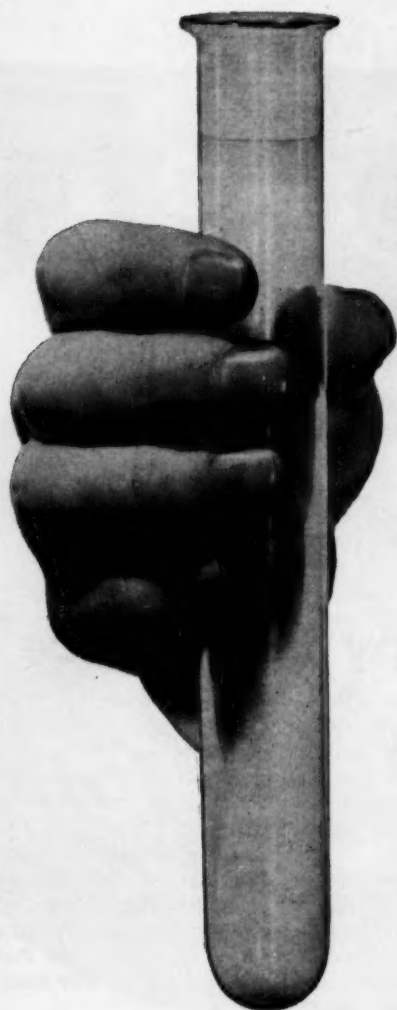
**Safe and Sane:** Meanwhile, it is intent on seeing Darlan off to a cautious, sure start. To this end, Goodrich paid a substantial sum to Amos Parish & Co. (New York) for the studies that ultimately yielded the name Darlan. And, to maintain control over all advertising and publicity on Darlan's retail debut, Goodrich is said to be bearing the entire cost of manufacturing the pile coats. Only small announcements of their availability are planned.

Research continues. Problems now being faced by Goodrich investigators are long familiar to producers of Darlan's acrylic and nylon relatives. A good static-eliminating compound, which won't disappear from the fabric after four or five cleanings, is reportedly being sought.

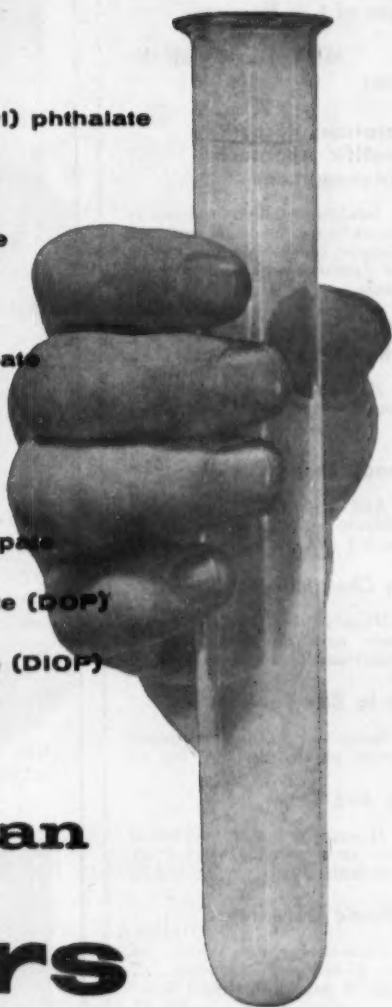
And researchers are also said to be seeking ways to improve the draping qualities of the relatively inelastic (compared to wool) synthetic. This is highly suggestive of a desire to make a serious play for the winter and fall suit business—a market that has proved considerably more resistant to synthetics than the summer suit trade.

As a result of their pioneering vinylidene cyanide investigations, Goodrich researchers have considerably more than a fiber to think about. Obtainable by pyrolysis of any one of several readily made products (diacyl cyanides, 4,4-disubstituted cyclohexenes, 1-acetoxy-1,1-dicyanoethane, and 1,1,3,3-tetracyanopropane), vinylidene cyanide forms polymers and copolymers that yield rubbers, may be cast into films, are suitable for casting and molding resins.

Plumbing all of these possibilities is work for many a day to come.



dioctyl azelate  
dimethyl phthalate  
di-(methoxyethyl) phthalate  
di-isobutyl phthalate  
diethyl phthalate  
dibutyl phthalate  
di-isobutyl adipate  
triacetin  
tributyrin  
di-(2-ethylhexyl) adipate  
dioctyl phthalate (DOP)  
di-isooctyl phthalate (DIOP)



# Eastman plasticizers

As a leading supplier of quality plasticizers, Eastman is pleased to announce the addition of di-isooctyl phthalate to its line. Manufactured from a new, improved type of isooctyl alcohol, this plasticizer possesses the excellent qualities for which the present Eastman plasticizers are noted. It is available in drum, tank truck and tank car quantities. DIOP is only one of the many fine plasticizers made by Eastman. For further information on any of the plasticizers listed above, write or call your nearest Eastman representative.

**SALES OFFICES:** Eastman Chemical Products, Inc., Kingsport, Tenn.; New York—260 Madison Ave.; Framingham, Mass.—65 Concord St.; Cincinnati—Carew Tower; Cleveland—Terminal Tower Bldg.; Chicago—360 Michigan Ave.; Houston—412 Main St.; St. Louis—Continental Bldg. **West Coast:** Wilson Meyer Co., San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Salt Lake City—73 S. Main St.; Seattle—821 Second Ave.

**Eastman**  
CHEMICAL PRODUCTS, INC.,  
KINGSPORT, TENNESSEE  
subsidiary of EASTMAN KODAK COMPANY



## Reports on Progress

Chemical Week updates significant topics of timely interest to the chemical process industries, compiles them in its continuing series of CW Reports.

Most recently off the press:

### Operations Research: Scientific Approach to Management

Intuition yields to science in formulating management decisions . . . mathematical models of operations research are the tools 50¢ □

### The Small Manufacturer in the Chemical Industry

His position, problems and future . . . and a case study 75¢ □

### Canada Comes of Age

And in doing so, it provides widening opportunities for U. S. capital and technology 50¢ □

### New Chemicals for Industry

Manufacturers' descriptions of their new products (426 of them) and potential uses 75¢ □

### How to Buy Equipment

Steps to follow to insure sound purchasing 50¢ □

### Pulp and Paper

Descriptive and statistical data on a growing market for chemicals 50¢ □

### Synthetic Detergents

Up-to-the-minute sketch of this 2.5-billion-lb. industry . . . with 18 pages of product data 75¢ □

Chemical Week  
Reprint Dept., Room 2400  
330 W. 42nd St.  
New York 36, N. Y.

Please send me the CW Reports checked above. Enclosed is \$.....

Send price for ..... copies of .....

(Bulk prices apply to more than 10 copies of a single report.)



SQUIBB TEAM\*: For penicillin, new competition.

## Chemotherapy Task Force

An array of new antibiotics stands eager for an assault on diseases that, so far, have successfully staved off chemotherapeutic attack. Unveiled this week at the Food and Drug Administration's third annual symposium on antibiotics in Washington, D.C., the newcomers are broadly aimed at Gram-positive bacteria—e.g., cocci—that cause hard-to-cure ailments.

Among the more versatile of the tyro drugs is thiostrepton, developed at the Squibb Institute for Medical

Research (New Brunswick, N.J.). Clinically promising, it is reportedly active against bacteria that are resistant to penicillin, streptomycin, tetracycline and other antibiotic stand-bys.

For this reason, thiostrepton is sure to get closer scrutiny in combating the staphylococci and streptococci that cause endocarditis, gastroenteritis and a number of systemic ills that don't respond readily to other treatments.

The drug's discoverer, Squibb's

\* L. to r.: Donovick, Stout, Weinstein, Pagano.



RATHE, FOLKERS, KACZKA: Attacking immunity.

... as corrosive as hydrochloric acid

... as critical as caustic soda

... as volatile as chloroform

as viscous as molasses



problem liquids are stored safely  
in General American  
tank storage  
terminals

**Terminals located at:**

Port of New York (Carteret, N. J.)  
Port of New Orleans (Good Hope, La.)  
Chicago, Illinois (Bedford Park)  
Port of Houston (Galena Park and  
Pasadena, Texas)  
Corpus Christi, Texas

Easy-to-handle liquids and problem liquids alike . . . they're all in a day's work for the men at General American terminals. Storage capacity of over half-a-billion gallons is available for any liquid that can flow through a pipeline.

Facilities are also available for blending to your specification . . . for drumming, barreling and canning to meet your needs. You get the privacy, service, safety and flexibility of your own terminals without capital investment.

By maintaining liquid inventories at General American terminals, you can fill rush orders for your customers or meet your own needs quickly, efficiently and economically.

*It Pays To Plan With General American*

**GENERAL AMERICAN TANK STORAGE TERMINALS**

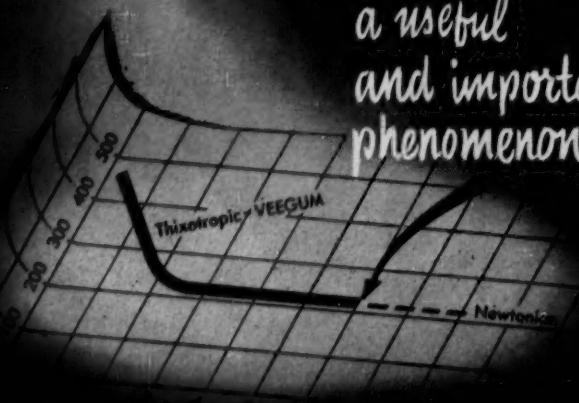
a division of **GENERAL AMERICAN TRANSPORTATION CORPORATION**

135 South La Salle Street • Chicago 90, Illinois



this is THIXOTROPY...

a useful  
and important  
phenomenon



**THIXOTROPY** — The peculiar property of certain substances to form reversible gels — is a particularly valuable and advantageous characteristic in emulsifying and dispersing agents... and one outstanding agent, possessing this desirable quality, is Vanderbilt developed **VEEGUM**.

For example, it is the thixotropic character of **VEEGUM** in aqueous dispersions which accounts for its superior behavior over commonly used organic emulsifiers. It permits suspensions of higher solids content at lower suspension viscosities — it imparts better stability under wider variations in temperature and humidity — it improves the texture and consistency of the materials in which it is used. Specific tests\* of **VEEGUM** conducted in our laboratories show results that will be of interest to chemists in this field.

**VEEGUM** also exhibits other advantageous characteristics in aqueous dispersions which give it an exceptionally wide application:

**DISPERSIBILITY** — Veegum is highly effective in dispersing hydrophobic or colloidal materials in water without the foam of lowered surface tension.


**STABILITY** — Veegum dispersions as low as 1% will permanently stabilize emulsions containing many types of oils, fats, and waxes.

**COMPATIBILITY** — Veegum in aqueous dispersions is compatible with alcohols, polyglycols, and other organic solvents, as well as certain electrolytes.

**THIXOTROPIC Veegum** is purified colloidal magnesium aluminum silicate, nongreasy, nontoxic, and nonirritating. It is opaque white, odorless and tasteless, and is easily prepared in smooth aqueous dispersions with or without heat.

**OTHER VANDERBILT SPECIALTY PRODUCTS FOR THE CHEMICAL INDUSTRY**

**DARVAN** — dispersing agents of unusual effectiveness in reducing agglomerates to ultimate particle size. **NYTAL** — talc of exceptionally fine particle size, unusual brightness, purity, and consistency. **PEERLESS** and **CONTINENTAL** — kaolins for industry and agriculture. **PYRAX** — a widely used pyrophyllite of superior quality and purity.

**R. T. VANDERBILT CO.**   
SPECIALTIES DEPARTMENT

230 PARK AVE., NEW YORK 17, N. Y.

Please send ☐ Information ☐ Sample

**VEEGUM** ☐ **DARVAN** ☐ **NYTAL** ☐ **PEERLESS** ☐ **CONTINENTAL** ☐ **PYRAX** ☐

(state application) \_\_\_\_\_

NAME \_\_\_\_\_

POSITION \_\_\_\_\_

(Please attach to, or write on, your company letterhead)

**RESEARCH . . . . .**

Joseph Pagano, Marvin Weinstein, Helen Stout and Richard Donovan, envision applications beyond human therapy: thioestrepton has displayed ability to cope with mastitis—which now causes a \$200 million/year loss in the dairy industry. And it is also a potential candidate for agricultural crop use.

Like thioestrepton, cathomycin—discovered by Merck researchers—features efficacy against several heretofore immune staphylococci. The crystalline compound was isolated by Merck's Fern Rathe, Karl Folkers and Edward Kaczka, is reportedly unique in being equally active whether administered orally or by injection.

Continuing a research trend toward versatile rather than specialized therapeutic agents, Upjohn investigators offer streptonivicin (tradenamed Albamycin). Early clinical trials on three children at the Camden Municipal Hospital (Camden, N.J.) indicate its value in treating the diverse causes of bronchitis, skin infection and whooping cough.

Features: reported absence of cross-resistance (bacteria that have become insensitive to other commonly used antibiotics are said to be vulnerable to streptonivicin); blood levels 50 times higher than penicillin, 25 times higher than erythromycin.

**Aiming:** Also important targets of researchers are better antifungal agents. Two new candidates for use against disease-causing fungi are Squibb's amphotericin A and B (both are obtained from the same streptomycete culture). The amphotericins, unlike most antifungals (Mycostatin is an exception) may be administered orally. And skin infections, such as ringworm, have responded to treatment with amphotericin ointment.

Similarly, a new systemic antifungal called eulicin reportedly protects mice against fungal infection when given orally. Eulicin is under study at Merck's Sharp & Dohme division (West Point, Pa.).

Another new antifungal (#1968), produced by an organism tentatively identified as *Streptomyces aminophilus*, is the subject of investigation at the FDA's division of antibiotics. Culled from antibiotic culture #1968 supplied by the Nepera Chemical Co. (Yonkers, N.Y.), the newcomer is said to be potential chemotherapeutic agent for systemic mycoses in man.



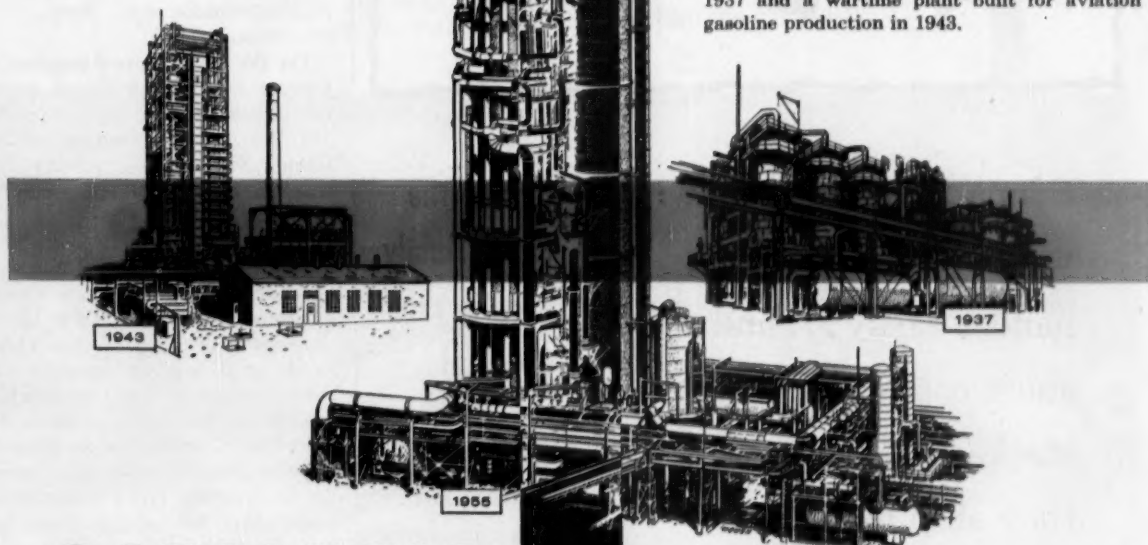
## THE EYE OF TIME

**"THE EYE OF TIME"**  
jeweled timepiece by Salvador Dali,  
shown by permission of  
The Catherwood Foundation,  
Bryn Mawr, Penna.



Through the decades, time's watchful eye has seen the steady development of new and mighty engineering achievements in the great Sun Oil Company refinery at Marcus Hook, Penna. . . helping set the pace for the giant forward strides of America's petroleum industry.

During 1955, Catalytic Construction Company's complete petroleum engineering services have added the sixth catalytic cracking plant in this refinery, a towering Houdrifiow unit. Pictured also are a Houdry Fixed Bed plant erected in 1937 and a wartime plant built for aviation gasoline production in 1943.



# CATALYTIC

1528 Walnut Street



CATALYTIC ON-TIME . . . ON-BUDGET SERVICES

## construction company

Philadelphia 2, Penna.

In Canada:  
CATALYTIC CONSTRUCTION OF CANADA,  
Limited; Sarnia, Ontario

for the atomic energy, chemical, petrochemical, petroleum and metallurgical industries • Project Analysis • Process Design • Economic Studies • Engineering • Procurement • Construction • Plant Operation



Bemis Multiwalls made with RUF-GRIP kraft handle easily ... and stack easily ... and stay stacked. Consequently, they ship and store better. Get the details from your Bemis Man.

\* TRADE-MARK

# Bemis

General Offices—St. Louis 2, Mo.  
Sales Offices in Principal Cities

Also in the  
Bemis Family,  
Serving the  
Chemical  
Industry ...

Waterproof  
(Laminated)  
Bags



## RESEARCH . . . . .

It's plain that this year's new antibiotics will take a lot of chemical and clinical evaluation before they become remunerative pharmaceuticals. Meanwhile, at least one of last year's entries—Pfizer's PA-105 (*CW*, Nov. 13, '54, p. 94)—shows signs of making the grade. Clinically appraised at Children's Hospital (Washington, D.C.) during the past year, PA-105 rivaled penicillin and erythromycin in treatment of bacterial pneumonia.

Despite each year's advances, antibiotics still face a long trip to perfection. Needed are drugs that combine the ultimate in absence of cross-resistance, high activity and low toxicity at low dosage, negligible effect on host cells, and that (although this is a moot point) kill bacteria rather than merely inhibit their growth. But while the optimum has still to be reached, this year's crop of antibiotics is evidence that researchers don't consider it an unattainable goal.

**On the Label:** Seven members of Fisher Scientific's new line of spectroscopic reagents are now available. They are: acetone, methanol, chloroform, cyclohexane, carbon tetrachloride, isopropanol and methylene chloride.

**Rubber Spotter:** National Bureau of Standards reports a fast new method of determining natural rubber in vulcanizates of GR-S and natural rubber. Involving thermal decomposition of the vulcanizates and spectroscopic analysis of the resulting products, the procedure is detailed in the bureau's research journal. Aside from speed, the new method offers a method of quantitatively analyzing polymers that are difficult to put into solution.

**To Tell the Difference:** Phoenix Precision Instrument Co. (Philadelphia) has brought out a new portable instrument for the direct measurement of the difference in the refractive indexes of a dilute solution and its solvent. Designed for use in conjunction with determinations of molecular weight by light-scattering,\* the device reportedly may be used to implement other procedures.

**Arrivals:** Two new chemicals recently went into small-scale produc-

\* Which calls for data on turbidity as well as a determination of the difference in refractive index between a solution and its solvent.

# PERFORMANCE AND PRICE...

make Benson Aluminum Drums Ideal for  
Norda Essential Oil & Chemical Company, Inc.

## PROBLEM:

Shipment of aromatic and essential oils for cosmetics and food stuffs by Norda Essential Oil & Chemical Co., New York.  
(Galvanized and steel drums cause contamination of oil products. Glass containers too fragile—stainless steel too expensive.)

## SOLUTION:

### Purchase of 600 Benson Aluminum Drums

(Strong, light, corrosion resistant aluminum drums prevent contamination, are highly durable, provide easier handling and storage.)



Light weight of aluminum drums facilitates handling and shipping.



Aluminum drums protect against contamination and shipping damage.



Durable aluminum drums have a long, useful life—despite hard usage.

First cost alone is only the beginning of the savings advantages of Benson Aluminum Drums. Replacements are less frequent—aluminum drums won't rust or shatter. Light weight saves on handling and shipping charges. There are no costs for application of

protective coatings . . . no losses through contamination of chemical contents. For further information contact the Reynolds office listed under "Aluminum" in your classified directory or write *Reynolds Metals Company, P.O. Box 1800-CM, Louisville 1, Ky.*

See Our Exhibit  
at the  
25th Exposition  
Chemical Industries  
Philadelphia, Dec. 5-9

# REYNOLDS



# ALUMINUM

EXCLUSIVE SALES AGENTS FOR BENSON CHEMICAL DRUMS

November 12, 1955 • Chemical Week



## CHEMICAL FINANCING

Specialized assistance in  
**COMPANY DIVERSIFICATION**  
and  
**DEVELOPMENT PLANNING**  
within the process industries.

### CHEMICAL DEPARTMENT

RICHARD B. SCHNEIDER  
Vice President

WILLIAM H. McELNEA, Jr.  
Assistant Vice President

## Empire Trust Company

7 West 51st Street New York 19, New York

Member Federal Deposit Insurance Corporation

## TERGITOL Surface Active Agents

### A FULL LINE...one for every use

A complete selection of TERGITOL Surface Active Agents assures you that all your needs are covered, whether your process calls for a penetrant, emulsifier, wetting agent, or general-purpose surfactant. There are eleven TERGITOL Surface Active Agents to choose from:

- ▶ TERGITOL Nonionics  
NPX, TMN, NP-14, NP-27, NP-35, and NP-40
- ▶ TERGITOL Anionics  
7, P-28, 4, 08, and EH

It's easy to select the right one for your use because each of the TERGITOL Surfactants is designed for specific operating conditions.

*Call or Write*

the CARBIDE office near you for samples and further information.

"Tergitol" is a registered trade-mark of Union Carbide and Carbon Corporation.

### Carbide and Carbon Chemicals Company

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street New York 17, N. Y.

In Canada: Union Carbide Canada Limited, Toronto

## RESEARCH . . . . .

tion at Du Pont. They're pyromellitic acid (PMA) and pyromellitic dianhydride (PMDA), potentially useful in plastics and finishes. The addition of PMA (1,2,4,5-benzenetetracarboxylic acid) to alkyd resin formulations, states the company, results in improved film properties; while PMDA is said to form unusual polyamides, polyimides and polyesters. PMDA is also suggested as a curing agent for epoxy resins. Both compounds are expected to be available in development quantities by the first of next year.

**Built for Heat:** Super-Dylan, Koppers' low-pressure polyethylene, has turned up in a new line of laboratory beakers and centrifuge tubes offered by Nalge Co. (Rochester, N. Y.). According to Nalge, the plasticware may be safely autoclaved.

**New Standards:** Carnegie Institute of Technology's petroleum research laboratory is offering two new API standard hydrocarbon samples: 3-methyl-1-hexene and 1-ethylcyclohexene. Cost of each: \$50/5 ml.

**Open for Business:** Two new research laboratories were commissioned last week:

- At Des Plaines, Ill., Universal Oil Products unveiled a three-story brick building containing more than 60,000 sq. ft. of floor space. Feature: beneath the building's lobby is a 37x80-ft. bomb shelter that normally serves as a meeting room for up to 225 persons. Covered by a massive reinforced-concrete slab, the space has independent ventilation and power-generation, a first-aid room and storage cubicle for emergency rations.

- Jones & Laughlin dedicated its \$1.5-million laboratory in Pittsburgh, Pa. Comprising 40,000 sq. ft. of floor area, the two-story laboratory building (with its adjoining one-story office wing) houses the company's 127-person research division.

**On the Block:** Atomic Energy Commission has just released 37 patents for public use. Included: 2,710,249, iodine-132 generator and shipping container; 2,711,972, production of corrosion-resistant coatings on metal structures; 2,713,554, electrolytic method of recovering thorium from monazite sand; 2,714,165, isotope separating apparatus.

# for improved production

of esters, amides, ketones, peroxides,  
ureides and many other acid derivatives,

## ACID CHLORIDES ( $\text{RCOCl}$ )


In many cases, acid chlorides are indispensable. Advantages include better yields and conversions, shorter reaction times, lower reaction temperatures and lighter colored finished products.

Amides from acids or acido acids

Esters from acids

Ketones from acids and hydrocarbons

Peroxides from acids and peroxides



INTERMEDIATES DIVISION  
**THE TRUBEK LABORATORIES, INC.**

ESTABLISHED 1932

East Rutherford, New Jersey

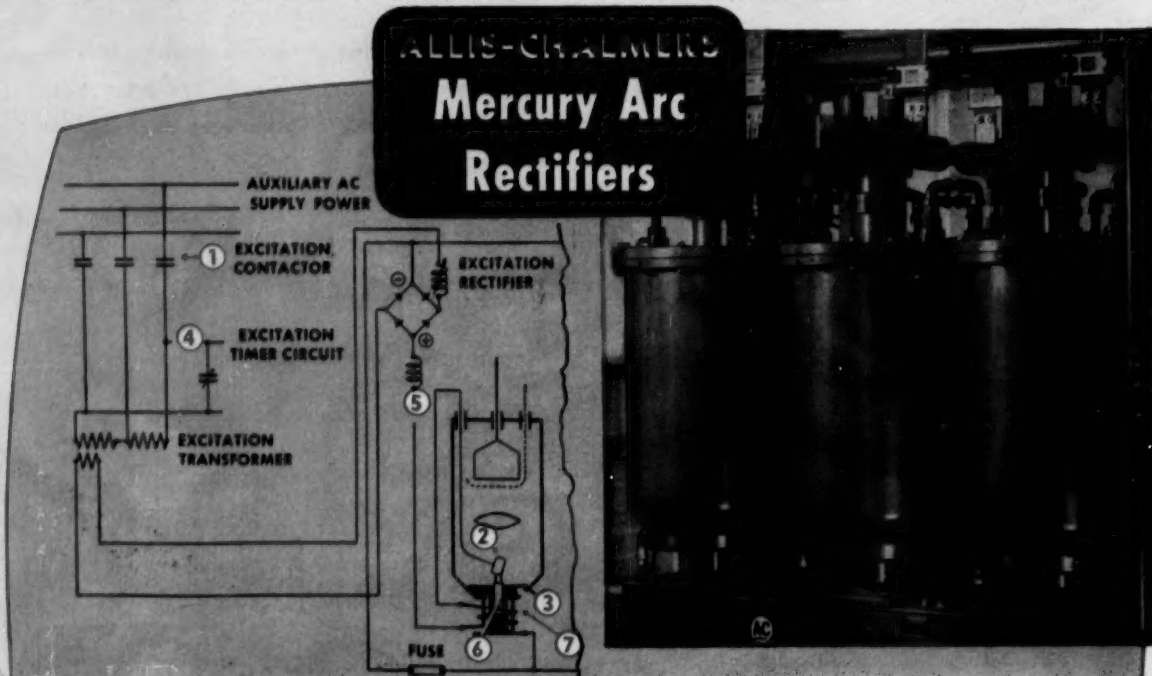
# For Reliable Rectifier Operation Get Continuous Excitation

Allis-Chalmers excitron rectifiers eliminate the need for a pulse-type firing system timed for operation every cycle. Maintenance is easy because of the simplicity of design.

A small dc excitation arc is automatically ignited only once, when the unit is started, and then maintained on the mercury cathode of each rectifier tube.

It offers advantages similar to a pilot light. Since it is far easier to maintain an arc than to start it, this feature makes the excitron far less likely to lose excitation during power supply disturbances than other types of rectifiers.

Get all the facts about excitron rectifiers before your next installation. Call the A-C office nearest you or write Allis-Chalmers, Milwaukee 1, Wisconsin.



## Supply of DC Provides Key to Continuous Excitation

Direct current supplied from excitation rectifiers is the key to continuous excitation. When the excitation system is energized by means of a contactor (1), positive dc potential appears on the excitation anode (2) of each tube, negative at the cathode (3). A timer (4), through contacts of the excitation failure relay (5), is energized at the same time.

As soon as voltage is applied, current flows from the anode to the cathode through the ignition plunger (6). This current energizes the ignition coil (7) and causes the plunger to be pulled below the mercury surface. As the plunger

travels down, an arc is drawn which transfers from the graphite tip of the plunger to the mercury. This current flow keeps the coil energized, maintaining a continuous arc.

If excitation failure should occur while the rectifier is carrying load, the plunger is released, floating upward in the mercury until it makes contact with the anode, then repeating the process above until the arc is re-established.

Re-establishment of the arc as outlined takes less than a second — it does not interfere with normal operation.

# ALLIS-CHALMERS



A-4592





## On a Raceway Toward Oblivion?

Chemical additives for gasoline and automotive lubricants face an uncertain future beyond 1965, although auto makers' predictions of a continuing boom in car sales during the intervening years may seem to contradict that appraisal. The new turbine engine—say its proponents—is just around the next decade; and when it comes, many additives will start backtracking into obsolescence.

But right now there's still plenty of life in the additives business. How much, is the question answered by W. E. Kuhn and J. W. Hutcheson in a special report for The Texas Co.

The phenomenal growth of additives use began about 1940, although tetraethyl lead has been added to gasoline since 1923. Impetus to the latent market was provided by rapid changes in engine design, which created the need for special materials to decrease deposition, disperse dust particles, control viscosity, retard corrosion, etc.

**Additive Add-up:** By this year, these developments have created an annual additives market in excess of a million barrels for crankcase oils alone. In contrast, only 45,000 bbls. of motor oil additives were produced in 1941.

Meanwhile, 1953 marked the threshold year for several important changes in the automotive industry—such as the advent of power steering, and

large-scale use of certain gasoline additives—hence it now serves as a good reference point for the evaluation of additives use trends. Such a base-line year is needed because of the lack of complete data on many materials.

The nation's 1953 gasoline additive consumption, based on the needs of 46.5 million cars, tallied about 223 million lbs. of tetraethyl lead; 65.6 million lbs. ethylene dibromide; 69.8 million lbs. ethylene dichloride; 7.3 million lbs. dye; 10.3 million lbs. gum inhibitor. Additive consumption in gasoline was close to 376 million lbs.

By 1960, assuming a projected census of 58 million cars, gasoline additive needs should climb to at least 482 million lbs. perhaps 520 million.\*

Additives used in crankcase oil in '53 included an estimated 137.8 million lbs. of detergents; 91.8 million lbs. of inhibitors; 85.3 million lbs. V.I. (viscosity index) improvers and pour depressants; and 26,000 lbs. antifoam agents—315 million lbs. in all. By 1960, motor oil additives should push to 393 million lbs. annually.

Because it is not presently practicable to attempt separation of automatic

and standard transmission data, estimates (for statistical purposes only) are made on the assumption that all cars use a single type.

On this assumption, 1953 requirements of automatic transmissions would have been 18.6 million lbs. of detergents; 37.2 million lbs. sulfurized materials; 9.3 million lbs. inhibitors; and 37.2 million lbs. V.I. improvers. The total, 102.3 million lbs., would increase to 127.6 million by '60.

On the other hand, if by 1960 all cars were equipped with standard transmissions, only 12.8 million lbs. of additives would be needed. Hence transmission additive consumption in 1960 will fall somewhere between these statistical estimates.

**Antifreeze Fluid:** From the car owner's point of view, all of the foregoing chemical components represent a "hidden" market. Not hidden, of course, is his need for antifreeze.

Unfortunately, an accurate estimate of actual antifreeze consumption in 1960 is not feasible, since the relative quantities of different types to be used cannot be anticipated.

However, on the theoretical assumption that all cars will use ethylene glycol-type materials in 1960, the market volume would amount to more than 1.1 billion lbs. In comparison, 859.5 million lbs. would have been

\*A closer approximation is not possible since the consumer will have a choice between additives of the types introduced to the market in the past two years. One example of a relatively new additive is Texaco's Petrox, a non-metallic, nonsalt type, wholly hydrocarbon-derived material.

## EL DORADO COCONUT OIL



### FEATURE CONTROLLED CHEMICAL COMPOSITION

... so you get better and easier control during processing ... plus a better, more uniform end product.

### SPECIFY EL DORADO FOR

- PURITY
  - SERVICE
  - UNIFORMITY
- ELDO

### CAPRYLIC ACID

94-96% pure

Eldo's high purity gives you better processing ... greater uniformity in your finished products.

#### FATTY ACIDS

CAPRYLIC	ELDHYCO *	CAPRIC
LAURIC	COCONUT	MYRISTIC
	PALMITIC	

#### METHYL ESTERS

CAPRYLATE	ELDO 18 *	CAPRATE
LAURATE	COCONATE	MYRISTATE
CAPROATE		PALMITATE

\*T.M. Reg.

For samples and specifications, write  
Dept. W



P. O. Box 599, Oakland 4, Calif.

## MARKETS

### TODAY'S AUTO USES THESE ADDITIVES:

#### Gasoline:

Tetraethyl lead  
Ethylene dibromide  
Ethylene dichloride  
Dye  
Gum inhibitor  
Organic salt additive  
or  
Nonmetallic additive

#### Cooling system:

Ethylene glycol  
Methanol  
Inhibitors

#### Wheels, chassis, water pump, springs:

Metal soaps  
Graphite

#### Crankcase:

Detergent  
Inhibitor  
V. I. improver  
Pour depressant  
Antifoam agent

#### Power steering mechanism:

Detergent  
Sulphurized material  
Inhibitor  
V. I. improver

#### Differential and Std. Transmission:

E. P. agent  
V. I. improver  
Antifoam agent

#### Body lubrication:

Oiliness agent  
Anti-oxidants

#### Automatic Transmission:

Detergent  
Sulfurized material  
Inhibitor  
V. I. improver

#### Generator, distributor, air cleaners, starter, fans:

Detergent  
Inhibitor  
V. I. improver  
Pour depressant  
Antifoam agent

consumed in the nation's cars in 1953 had the market been limited to glycols.

Methanol statistics, of course, could be used just as well for a measure of the coming market, in which case the 1960 antifreeze figure would be somewhat over 813 million lbs. Either comparison indicates a sizable increase in the consumption of antifreeze chemicals during the next five years, regardless of how the total volume is proportioned between competing types.

It is obvious that, in general, the consumption of chemical components in motoring products will continue to grow during the next few years, although the rate of increase will fall off; market expansion in the immediate future will be more closely tied to a gradual increase in the automobile census than to the influence of new engine designs.

There will be certain exceptions. Increased application of automatic transmissions and power steering, for example, will account for a considerable increment in the growth picture; installation of the latter mechanism in all cars in 1960 would up additive

needs in power-steering fluid to about 17.6 million lbs.

But projection of additives growth in the future becomes hazardous since other technological changes, viz. turbine engines, will change the structure of the additives industry.

How soon will this revolution begin to take place? Automotive industry proponents of turbine engines anticipate 60,000 to 300,000 turbine powered cars on the highways in 1960. By 1965, say the optimists, we should see 3.9 million on the roads; and by 1975, from 48 million to 62 million.

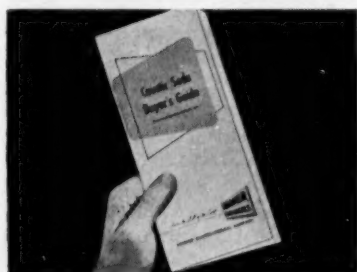
Immediately affected by a switch to turbine engines will be gasoline and oil additives, and antifreeze materials. Premium-grade fuels containing anti-knock compounds will not be required; motor oil demands—and hence oil additive needs—will be very small; elimination of radiators will drain the antifreeze market.

Are, then, additives speeding toward oblivion? Not necessarily. Other industries will probably have increasing need of additive-fortified lubricants; for example, about half the

# BRIEFS

for buyers of

Caustic Soda  
Muriatic Acid  
Aluminum Chloride



## What strength caustic should you buy?

This new booklet gives facts every buyer should know about caustic soda.

It contains a handy nomograph to help figure for yourself whether 50% or 73% caustic is your better buy.

Contents include a list of reasons *pro* and *con* switching to 73% caustic if you are now using 50%. There's a factual discussion of the economics of 73% vs. 50%.

The booklet also contains a nomograph for estimating your liquid caustic requirements for various process solution strengths; a table showing dimensions and capacities of the different containers in which Hooker caustic soda is shipped; and a list of points to look for when you're choosing a caustic soda supplier.

Check the coupon at right for your copy (or write us if you'd like more than one).

## High-purity HCl.

Probably the purest muriatic acid you can buy in volume anywhere is Hooker White.

This special-grade muriatic is entirely free of arsenic. It contains .003%

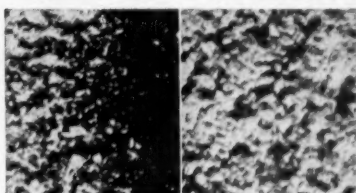
or less sulfates, and .0001% or less iron.

Leading pharmaceutical firms are among those who specify Hooker White when they want a highly pure starting material.

If your requirements are slightly less stiff, we recommend Hooker commercial grade muriatic. This grade is entirely arsenic-free, and has very low sulfate and iron content.

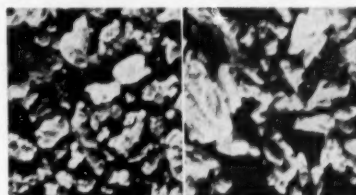
Both grades are available in 18°, 20°, and 22° Baumé. Muriatic acid is shipped in rubber-lined tank cars and 13-gal. glass carboys.

For technical data sheets, check the coupon.



EXTRA FINE GRIND

FINE GRIND



COARSE GRIND

COARSE SCREENED

## Catalyst control.

Surface area of a solid catalyst, such as aluminum chloride, of course bears an important relationship to reaction rate.

That's why we make aluminum chloride in four different mesh sizes (shown above, actual size). You can

get close control of reaction and feeding rates by specifying, from the following list, the size that best fits your process:

1. Extra fine grind (90-95% through 40 mesh).
2. Fine grind (almost all through 20 mesh).
3. Coarse grind (through 1 mesh, 25-35% through 20 mesh).
4. Coarse screened (through 1 mesh, on 20 mesh).

This material is a grayish crystalline solid containing 98.5%  $AlCl_3$  in coarse sizes, 97.5% in fine sizes, with maximum iron content of 0.05%.

It is shipped in the following containers:

5-gal. pails	50 lbs. net
10-gal. removable head drums	100 lbs. net
55-gal. removable head steel drums	550 lbs. net

For technical data, check the coupon.

## For more information

on items mentioned here, check below.

- ☐ Aluminum Chloride, anhydrous
- ☐ Caustic Soda, liquid (50% and 73%)
- ☐ Muriatic Acid

**Do you process** with any of these compounds? The list below is only partly representative of high-quality materials available in quantity at Hooker. Check those on which you'd like more information.

- ☐ Antimony Trichloride, anhydrous
- ☐ Benzotrithloride
- ☐ Benzoyl Chloride
- ☐ Benzyl Chloride
- ☐ Benzyl Thiocyanate
- ☐ Butyryl Chloride
- ☐ Caprylyl Chloride

Clip and mail to us with your name, title, company address.



1905—Half a Century of Chemicals

From the Salt of the Earth—1955

**HOOKEE ELECTROCHEMICAL COMPANY**

3 FORTY-SEVENTH STREET, NIAGARA FALLS, N. Y.

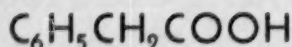
8-1789

NIAGARA FALLS • YACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES



KAY-FRIES

## PHENYLACETIC ACID



A reactive methylene group has made PHENYLACETIC ACID a valuable general organic intermediate, although the full potential in synthesis has not been explored. It is well-known as a penicillin precursor and has been mentioned as a plant fungicide and hormone. Other suggested uses are as an intermediate for drugs (antispasmodics, sedatives, antiseptics, and anticoagulants); perfume aromatics; and insect repellents. It undergoes anhydride formation, chlorination to the acid chloride, esterifications, amidation, in the normal manner of an organic acid. Kay-Fries also manufactures alkali metal salts of phenylacetic acid, both anhydrous and in solution.

### KAY-FRIES SPECIFICATIONS

purity: 99.0% minimum	ash: .05% maximum
melting point: 76°C minimum	form: white flakes

### TECHNICAL BULLETIN AVAILABLE

WRITE OR PHONE



American-British Chemical Supplies, Inc.

Selling Agents For

**KAY-FRIES CHEMICALS, INC.**

180 Madison Avenue, New York 16, N. Y. •

Murray Hill 6-0661

## MARKETS . . . . .

lubricants used in steel mills now contain additives, and speeded-up operations will continue to create new demands for such chemical components.

Too, it is entirely possible that advanced designs of turbine engines will require new types of additives. At any rate, some of the answers may be found within the next 10 years. And to automobile designers—and chemical makers—that's only a short hop into the future.

### Synthetic Flurry

Last week, the synthetic-fiber-consuming market went into an uproar, simmered down, and went into a boil again. The reactions were first sparked when Chemstrand decided to cut its Acrilan prices by some 20%, set off speculation that a price war was brewing. The cauldron cooled when competitor fiber makers Du Pont (Orlon) and Union Carbide (dynel) said that each would hold to its present schedules.

Within 48 hours, however, Carbide had reversed its decision, was also posting a new list of prices substantially lower than the scale in effect for the past 3½ years; example, staple and tow "Natural" 3, 6, 12 and 24 denier from \$1.28 down to \$1.05.

As of this writing, Du Pont insists that there will be no "deviation from its earlier statement not to change prices of its Orlon acrylic fiber." Despite sentiment among some users that Orlon tags will remain unaltered, others are inclined to disagree, believe that the latter's \$1.60/lb. price is too far out of line with Acrilan and dynel.

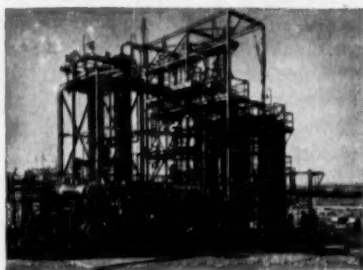
The current situation, in some aspects, is strikingly similar to that prevalent in early '54 when Acrilan prices were slashed about 45¢/lb., following, by 24 hours, an Orlon reduction of 10¢. That hubbub fizzled out, then, as it became apparent that Chemstrand's move was simply part of a drive to recapture once-lost outlets.

This time, too, according to Chemstrand Vice-president and General Manager W. G. Luttge, the aim is to expand Acrilan use.

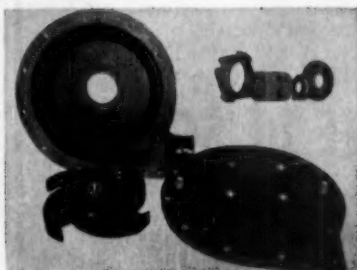
On the other hand, Carbide and Carbon's spokesman A. L. Snyder, sales manager of the Textile Fibers Department, expects that the new prices will assure "continuation of dynel's sold-up position," even when a new 35% expansion in capacity is completed, about Feb. 1, '56.

# WHERE HAVEG EQUIPMENT IS INSTALLED

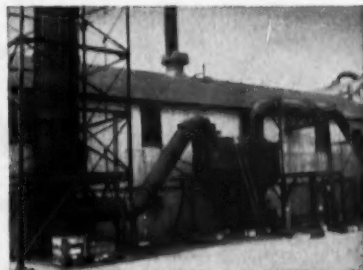
TRADE MARK REG. U. S. PAT. OFF.



PETRO-CHEMICAL plants have been designed and built primarily around the use of Haveg . . . in pressure tanks, absorbers, pipe.



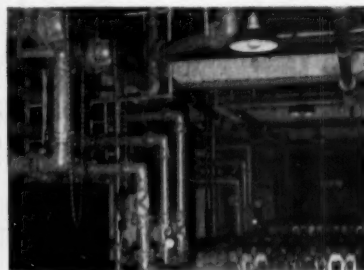
PUMP PARTS, made from Haveg, used in hot acid, last over 33 months without replacement. Even longer life is common.



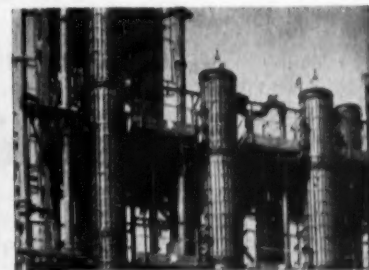
STACKS AND FUME SYSTEMS of Haveg pay for themselves by lasting for years without repairs. This stack is 200' high, 5' dia.



BIG TANKS can be made rapidly from Haveg. The world's biggest single-piece molded tanks, each holds 7500 gallons.



PIPE and fume duct made of Haveg withstands rapid temperature changes, takes high heat with complete safety, is easily installed.



TOWERS bigger, better, more corrosion resistant are made from Haveg, the construction material that widens design ranges.



PICKLING TANKS of Haveg prevent specking or flaking, reduce rejects, make plating uniform. Molded tanks can be made any size.



VALVES of Haveg are made in Y-valve and diaphragm styles, with interchangeable parts, smooth operation, long service life.



POLYESTER-GLASS equipment is now being made by Haveg—towers, ducts, tanks, linings. Shown is a P-G acid tank cover.

## Chemical Corrosion has been Controlled!

Haveg is a molded rigid plastic material made from acid-digested asbestos and synthetic resins selected for difficult service with corrosives. It can be used continuously in a high range of process temperatures with safety and a proven history of performance.

Also, to more completely cover customers' requirements, the Haveg Corporation has added to its long list of corrosion-

resistant products: Polyester-glass and polyvinyl chloride equipment. A wide range of acid-proof cements for brick work and field fabrication. Specialties made from duPont's Teflon—sheets; gasket, packing, diaphragm materials; rods, tubes.

For full information, call the sales engineer listed, see Chemical Engineering Catalog, write for new 32-page Bulletin C-12.

ATLANTA 5, Exchange 3821 • DETROIT 39, Kenwood 1-1785  
CHICAGO 11, Delaware 7-6088 • HOUSTON 4, Jackson 2-6840  
CLEVELAND 20, Washington 1-8700 • LOS ANGELES 14, Mutual 1105  
WESTFIELD, N. J., Westfield 2-7383

November 12, 1955 • Chemical Week

**HAVEG CORPORATION**  
A SUBSIDIARY OF HAVEG INDUSTRIES, INC.  
TRADE MARK REG. U. S. PAT. OFF.  
900 GREENBANK ROAD • WILMINGTON 8, DEL. WYmen 8-2276

# SODIUM BICARBONATE, U.S.P.

*Specialized Grain Sizes*

## MONOHYDRATE of SODA

## SAL SODA

*Technical Service*

**CHURCH & DWIGHT CO., Inc.**

70 Pine Street

New York 5, N. Y.

Phone DIgby 4-2181

## MARKETS . . . . .

### More for Civilians

It's not too early to start planning for next year. By this week, for instance, aluminum makers are already setting up output schedules for early '56. Some 145 million lbs. of aluminum, from the total supply available in the first quarter of the new year, will be set aside to fill Dept. of Defense and Atomic Energy Commission orders.

The earmarking is a Business & Defense Services Administration estimate of the needs for government agencies and for defense-related "B" products, foil, and ingot for powder.

The 145-million-lb. reserve is 2 million lbs. less than that set aside in the last quarter of '55. The first-quarter figure represents 16% of the anticipated supply of domestic and imported primary aluminum for that period, while fourth-quarter set-asides are 17% of anticipated supply.

BDSA explains the decrease as reflecting a change in military requirements. This does not necessarily indicate that the U.S.'s military program is slowing down; for even with an unwavering total production schedule, materials consumption will vary from quarter to quarter. Reasons: vacillating inventory levels; changes in military specifications; model revisions.

Under the defense materials system (in effect since July 1, '53), that portion of the aluminum supply available to the U.S., above the quantity headed for defense and atomic energy requirements and the national stockpile, is freed for civilian consumption without any restriction.

(Earlier this month, the Office of Defense Mobilization reported that the minimum objectives of the national stockpile had been more than half reached at the close of the fiscal year on June 30. In a reference to the aluminum status, ODM described the supply situation as having been "vastly strengthened" over a few years ago. Higher output now, though, while tending to diminish, does not eliminate the need for an aluminum stockpile.)

Officials of BDSA's Aluminum-Magnesium Div. again emphasize that military contractors and subcontractors placing orders with aluminum producers against the upcoming quarter's reserves are required to identify such orders with appropriate defense symbols.

WISCONSIN  
ALUMNI  
RESEARCH  
FOUNDATION

**PROJECT RESEARCH,  
CONSULTATION  
AND PRODUCTION  
CONTROL SERVICES**

*in*  
**Biochemistry,  
Chemistry,  
Bacteriology,  
and Pharmacology  
Insecticide Testing  
and Screening**

*Write for Price Schedule*

**WISCONSIN ALUMNI  
RESEARCH FOUNDATION**

P. O. BOX 2059-H

MADISON 1, WISCONSIN

**Danitra**

**NITRATES**

**POTASSIUM  
CHLORIDE**

**Refined and U.S.P.**

**Davies Nitrate Co.**

INCORPORATED

115 LIBERTY STREET NEW YORK 6, N. Y.





## EVEN DISTANT PLACES ARE LOCAL

Experience in all quarters of the world has given Procon an intensive knowledge of *local* operating conditions, building requirements and labor availability that has proved valuable in all phases of plant construction.

Combine Procon's broad construction experience in the petroleum, petrochemical and chemical fields with this local know-how and you have the really important reason why Procon should be consulted when you are planning any construction project.

Today—tomorrow—anytime, let Procon give you all the facts. Wherever you are, wherever you plan to build, Procon is well-equipped to serve you.

## PROCON *Incorporated*

1111 MT. PROSPECT ROAD, DES PLAINES, ILLINOIS, U. S. A.

**PROCON** (Canada) LIMITED

40 ADVANCE ROAD, TORONTO 18, ONTARIO

**PROCON** (Great Britain) LIMITED

BUSH HOUSE, ALDWYCH, LONDON, W. C. 2



WORLD-WIDE CONSTRUCTION FOR THE PETROLEUM,  
PETROCHEMICAL, AND CHEMICAL INDUSTRIES



## PRIME PERFORMANCE

**T**he consistent experience records of major chlor-alkali producers everywhere provide ample evidence of the prime importance of GLC ANODES in electrolytic cell operations.

ELECTRODE  DIVISION

**Great Lakes Carbon Corporation**

GRAPHITE ELECTRODES, ANODES, MOLDS and SPECIALTIES

**ADMINISTRATIVE OFFICE:** 18 East 48th Street, New York 17, N. Y.

**PLANTS:** Niagara Falls, N. Y., Morganton, N. C.

**OTHER OFFICES:** Niagara Falls, N. Y., Oak Park, Ill., Pittsburgh, Pa.

**SALES AGENTS IN OTHER COUNTRIES:** Great Northern Carbon & Chemical Co., Ltd., Montreal, Canada  
Overseas Carbon & Coke Company, Inc., Geneva, Switzerland; Great Eastern Carbon & Chemical Co., Inc., Chiyoda-Ku, Tokyo, Japan

# Market

## Newsletter

CHEMICAL WEEK  
NOVEMBER 12, 1955

Price changes continue to pop up here and there in the nation's chemical marketplace, but not with the frequency noted at the turn of the quarter last month.

What may be a significant new one, though, is General Aniline & Film's 7¢/lb. reduction on its 1,4-butanediol. The item (now 33¢/lb.) will likely trail-blaze a line of commercial-quantity high-pressure-acetylene derivatives to lower price levels when the firm's new Calvert City, Ky., plant comes on full-stream within the next few weeks.

There's no official word on capacity of the multimillion-dollar installation, of course, but estimates are that about 30-40 million lbs./year of the so-called Reppe products will eventually be produced there. These will include propargyl alcohol, polyvinylpyrrolidone (PVP), butyrolactone and several others.

A price change prediction will be fulfilled when at least two companies (Westvaco and Monsanto) post new schedules, effective Jan. 1, on some sodium phosphates. Included on the list slated for advances: sodium polyphosphate and tetrasodium pyrophosphate, both up 15¢/cwt. in all categories.

Surprisingly enough at the time, these important detergent materials were not raised when other phosphate chemical prices were increased Oct. 1. Chief reason for the industry hike-stalling until the new year are a few long-term contracts (*CW Market Newsletter*, Sept. 17) holding some producers to current prices.

Adding pressure for the new tripoly and pyrophosphate prices: recent dragged-out strikes in the Florida phosphate rock industry; higher labor and power costs.

More titanium-sponge consumers will save money on their purchases. Another major producer, Titanium Metals, will lop off 20¢/lb. on all its orders and commitments on its books.

The action follows a similar move by Du Pont last week, pegs price of the sponge at \$3.75/lb.—substantially lower than a not-too-long-ago \$5 tag.

Du Pont, incidentally, indicates that improvements in manufacturing processes and broadening of commercial markets should cause the price down-trending to continue.

Look for more scrambling among DDT sellers. With the domestic market in a seasonal doldrum, overseas requirements are getting keen attention.

For example, two procurements—one for Iran, one for Turkey—while comparatively small as such procurements go (total, something over 3 million lbs.), are stirring sellers to elbow for the business.

And next week, an additional United Nations order for about 3 million lbs. will be tossed up for bids.

There's no way of telling yet what prices will be quoted for the latter, but most trade followers are convinced that the ranges will be considerably under those offered earlier this year (*CW*, March 26, p. 92). One guess making the rounds: about 22¢/lb. for the 75% wettable powder specified.



# Market Newsletter

(Continued)

Domestically speaking, no DDT maker has yet officially altered his price schedule—27¢/lb. is still the c.l. quotation on the books. But illustrating the less-than-bustling condition of the market is this: a few small-lot customers are making rock-bottom offers (some as low as 20¢/lb.), and are occasionally finding a seller who'll say "okay."

On the other hand, and still in the pesticides arena, malathion use is spreading out. American Cyanamid's recently introduced premium-grade (said to have less odor than technical material) has broken into the indoor aerosol field. At least one formulator has received label acceptance for such use.

Price of the new grade of malathion is somewhat higher than the technical, will sell at \$1.11/lb. (c.l. or t.l.), \$1.17 in smaller quantities.

Reason behind some new lithium chemical reductions: greater availability—but the cuts aren't effective until the first of the year. That's when American Potash & Chemical will begin quoting lithium carbonate at 82¢/lb., c.l., and 87¢ on l.c.l. quantities, down 3¢/lb. from present schedules.

Lithium hydroxide on contract tonnages then will be 10¢/lb. less, will sell for 80¢ and 81¢, c.l. and l.c.l., respectively.

The company attributes the carbonate cut to "increased production"; the new hydroxide price will mark the start of large-scale production of the material at AP&C's American Lithium Chemicals \$6.6-million plant near San Antonio, Tex.

There's considerable speculation in the sulfur world concerning near-future status of U. S. export prices. Sparking discussion, of course, is the position Mexican-mined material has achieved to date with its lower-than-U.S. tags. That country now has the second largest production, and is the only nation outside the U. S. producing via the Frasch process.

It's moot whether or not pressure on U. S. producers to shave the differential between domestic and export prices will become strong enough to cause a change, but at least one major producer here feels it won't. His reasoning: worldwide demand for sulfur is booming—there's room enough for all sellers, even at divergent prices.

## SELECTED CHEMICAL MARKET PRICE CHANGES

Week Ending November 7, 1955

UP

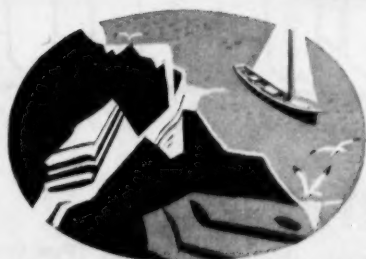
	Change	New Price
Casoin, imp., Argentine, acid-pptd., grd., bgs., c.l., duty paid	\$ 0.005	\$ 0.255
Chrome		
Green, C. & CP, dark, light, medium; blue content 1 to 15%, bbls.	0.02	0.40
Orange, CP, bbls.	0.01	0.33
Yellow, CP, bbls.	0.01	0.33
Yellow, zinc chromate, bbls.	0.01	0.27
Platinum, metal, wks., oz.	6.00	97.00
Silicon tetrachloride, tech., dms., c.l., wks.	0.02	0.18
Tallow, edible, tks., divd.	0.005	0.105
Tin, metal, Straits	0.0025	0.9662

All prices per pound unless quantity is stated.

# HARSHAW *Tableted* CATALYSTS

FROM

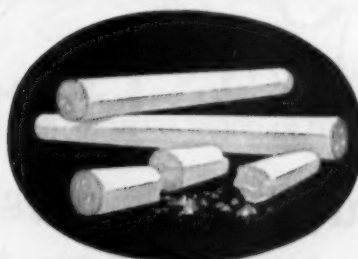
## *strong*



## *as rock!*

TO

## *soft*



## *as chalk!*

**whatever you specify**

### Typical Harshaw Catalysts:

Aluminum Chloride Anhydrous	Molybdena Alumina
Boron Trifluoride	Tungsten Alumina
Boron Fluoride Addition Compounds	Cobalt Molybdena Alumina
Hydrofluoric Acid Anhydrous	Copper-Chromium Oxide
Alumina—active or inert	Magnesia
Chrome Alumina	Nickel
	Vanadium
	Zinc-Chrome

### Harshaw Catalysts available in these forms:

Tablets	Powders	Spheres	Flakes
Extrusions	Granules	Rings	

### Use Harshaw Catalysts for these processes:

Hydroforming	Dehydrogenation	Desulphurization
Cyclization	Hydrogenation	Alkylation
Oxidation	Dehydration	Isomerization

Harshaw Catalysts—made exactly to your specifications of raw materials, chemical composition, and physical properties such as length, diameter, crushing strength, abrasion resistance, bulk density, etc. AND delivered when you want them!

Harshaw has the know-how—we pioneered in making customer specified catalysts. Harshaw has the facilities—we produce carloads every week!

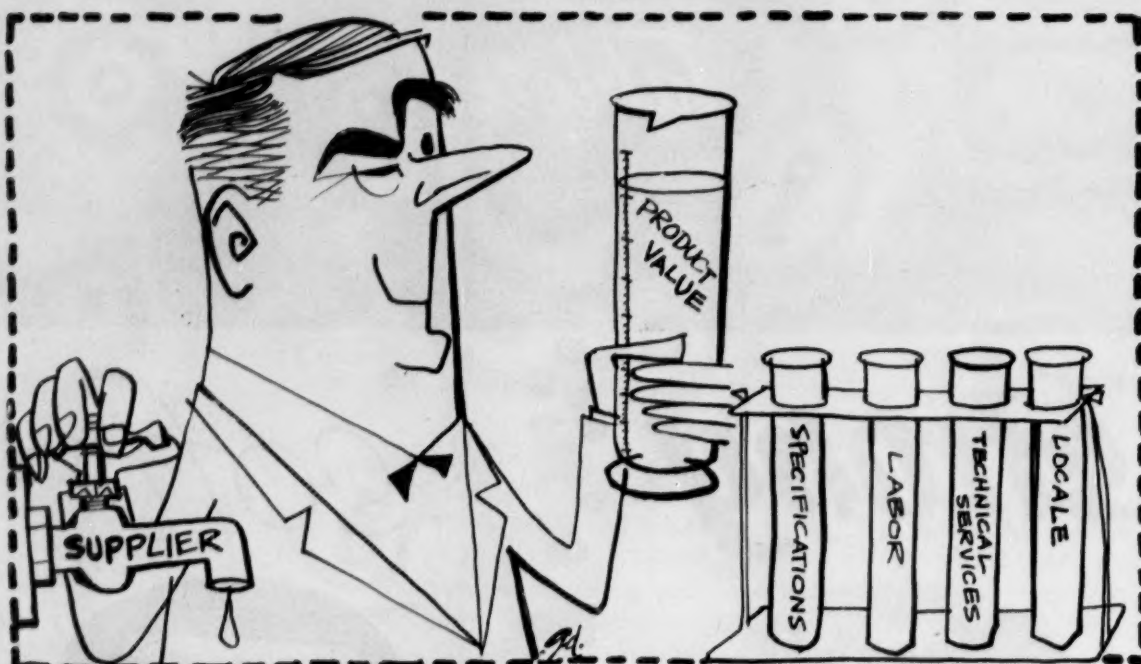
We are to you like the druggist is to the doctor . . . write your catalyst prescription and depend on Harshaw to fill it.

Our free booklet "Harshaw Catalysts" is yours for the asking. Write today.

**The HARSHAW CHEMICAL Co.**  
CLEVELAND 6, OHIO

CHICAGO • CINCINNATI • CLEVELAND • DETROIT • HOUSTON • LOS ANGELES  
HASTINGS-ON-HUDSON • PHILADELPHIA • PITTSBURGH

# DISTRIBUTION . . . . .



**PURCHASING RESEARCHING:** From its careful measuring, economies accrue.

## Buying Carves Its Niche

Regardless of where they are—whether it be in the carpeted skyscraper executive office or in a cramped plant cubbyhole—chemical purchasing men are drawing a bead on their most pressing problems. Current price increases, management questions, and communication needs are all fostering determined searches for specific tonics. In general, that much has turned up in *CW's* just-completed cross-country canvass of chemical purchasing agents.

More significantly, however, the canvass also revealed what's happening in procurement today. Opinions vary of course, but this appears to be the way purchasing people are confronting troubles of the times.

### Rising Prices

With prices of many raw materials crawling upward (to 5-7%), buyers are getting a chance to prove their mettle in cost-cutting. Many firms are seeking substitute chemicals, keeping a closer watch on inventories. One is switching vendors; another reports more make-vs.-buy decisions are falling in favor of manufacturing. Extended price-protection clauses (to

90 days) are being asked and some speculating activity is current. Two sizable companies are now evaluating foreign supply sources in an effort to pare costs.

Not all agents are encountering difficulty with prices, however. A good segment feels the peak is past anyway, that little can be done on essential items.

Surprisingly, one agent is encouraging price rises on some purchases. Reason: the company doesn't feel its suppliers have a margin big enough to guarantee stability as a source of supply.

### Procurement Puzzles

While some problems purchasing people are having now stem from price hikes (e.g., strong pressure to find cheaper raw materials), the most common complaint reflects a lack of broad-background buyers. Now recognized by management as no longer mere "order-placers," purchasing people must have many skills. Older men know practical business aspects, younger men know business theory or science technology. Merging the

three is the problem. (Few firms are willing to put business qualifications under technical ability.)

Some companies are stressing a fairly lengthy plant experience, weighing formal training programs. One is hunting new people with a B.S. in technology and a Master's degree in business administration. And many are encouraging frequent visits to plants from centralized departments. Curiously, Southern purchasers are having difficulties getting prompt deliveries on items travelling a long distance. Elsewhere, problems include:

- convincing suppliers to boost future capacity;
- achieving management recognition.

### Trends Taking Place

Broadly, purchasing seems to be moving in many directions—some new, some old. Parallel with its hard-won recognition, purchasing is getting more authority to control buying. Automation and other means to eliminate paperwork are on the planning boards in more than one company. (One reports experimenting this year with longer commitments and tele-





## KEL-F® dispersion-coated tank truck transports corrosive chemicals



**BAKE OVEN** at Kellogg Plant, Jersey City, N. J. Overall length 85 ft., width 12 ft., height 12 ft., iso-thermal control,  $\pm 5^\circ\text{F}$ . This new Kellogg oven is being used to develop improved techniques for large area applications.



**QUENCHING**—After final baking, tank is quenched to produce tough, transparent, flexible coating.

This tank, which is designed to transport corrosive chemicals without danger of contamination of the final product, was spray coated with KEL-F Dispersions at the Kellogg plant in Jersey City, and baked-fused in a specially built oven large enough to complete each coating in a single operation. Preliminary tests were carried out with a slightly smaller tank, and the correct techniques developed before proceeding with the coating operations on the tank truck.

### KEL-F DISPERSIONS—NEW WEAPON IN FIGHT AGAINST CORROSION

KEL-F Dispersions are finely divided fluorocarbon plastic solids in a volatile medium. Applied by spray, dip or spread coating, they are fused by heat into a tough, impervious coating—firmly bonded to the surface on which applied, and providing a chemical and temperature resistant surface that is anti-sticking and self-cleaning.

This liquid chemical carrier is evidence that the range of applications for KEL-F Dispersions is not limited by size, and that present techniques of dispersion coating can be applied to tanks and other outsize equipment. There are experienced applicators of KEL-F Dispersions, serving nearly every major industrial area. They can show you how this fluorocarbon polymer can come to your aid in your fight against corrosion and high processing temperatures. For more information, send for KEL-F Dispersion Manual, and list of applicators.



**THE M. W. KELLOGG COMPANY**  
Chemical Manufacturing Division, P. O. Box 469, Jersey City, N. J.  
SUBSIDIARY OF PULLMAN INCORPORATED

® Registered trademark of The M. W. Kellogg Company's fluorocarbon polymers

phoned orders for "fractions" as needed to be working fine.) Separation of purchasing operation and purchasing planning also looms as a possible development.

Purchasing research, personified by the "purchasing engineer," is getting quite a play; several companies report addition of special staff members to determine all aspects of a specific procurement, make recommendations. Market research for buying is climbing but opinion is split (sales or purchasing) on who should do it. Aiding one firm: a library exclusively for purchasing use.

Supplier evaluation (in particular), value analysis, buying by specification—already well established—are now

cementing their place. Several concerns now have formal "rating lists" of suppliers for hard goods. (Lists indicate what suppliers are dependable, what jobs they can and can't handle, etc.) Such lists for chemical vendors may be next.

Where centralization of purchasing is headed is anyone's guess. Recent moves point to more centralization—particularly for large-volume procurement. Contributing: price increases, trend to scientific purchasing. But, plenty of companies are well satisfied with decentralized setups.

#### Communications

**That hoary headache**—interdepartmental communication—still plagues

many purchasing people, but the pain isn't what it used to be. More and more, purchasing is working closer with production, research, management and development.

Special liaison groups, whose sole purpose is to integrate nonpurchasing and purchasing functions, are already in existence, and are increasing activity in some firms.

Special assignments that designate particular plant, research, and purchasing people to study a given requirement are now being tried by an Eastern firm. Another buyer is now at work on a purchasing manual to explain purpose and operation of his sections function. Circulation will include nonprocurement departments.

In the South, one company is doing nicely with weekly meetings for all overlapping departments, quarterly conferences for progress evaluation and 3-month planning.

Still other methods: having buyers constantly ask criticism of other departments; "rubbing it in" when other sections belatedly seek purchasing advice.

#### Relations Could Be Better

Some buyers believe that perfect relations are yet to be reached. Agents generally feel frankness between supplier and vender is growing, and they are steering salesmen more often to others in the concern.

Frequency of visits to supplier plants (now standard procedure) is being stepped up. Purchasing expeditors (not buyers) of one firm are now traveling to suppliers, learning their problems. Intimacy between buyer and seller has reached the point, in some instances, where prospective plants are modified in design to accommodate customers.

South of the Mason-Dixon line, one company now has a unique policy of considering anything a supplier suggests.

To counter a growing tendency of salesmen to concentrate on the home office, an Eastern procurement boss is encouraging more plant-level solicitation. Salesmen get told, "Ask the plant about quality kicks and next year's requirements."

Purchasing has undoubtedly achieved recognition—and judging from its current activity, purchasing may be heard still more forcefully in future management decisions.



## Posing a Symposium

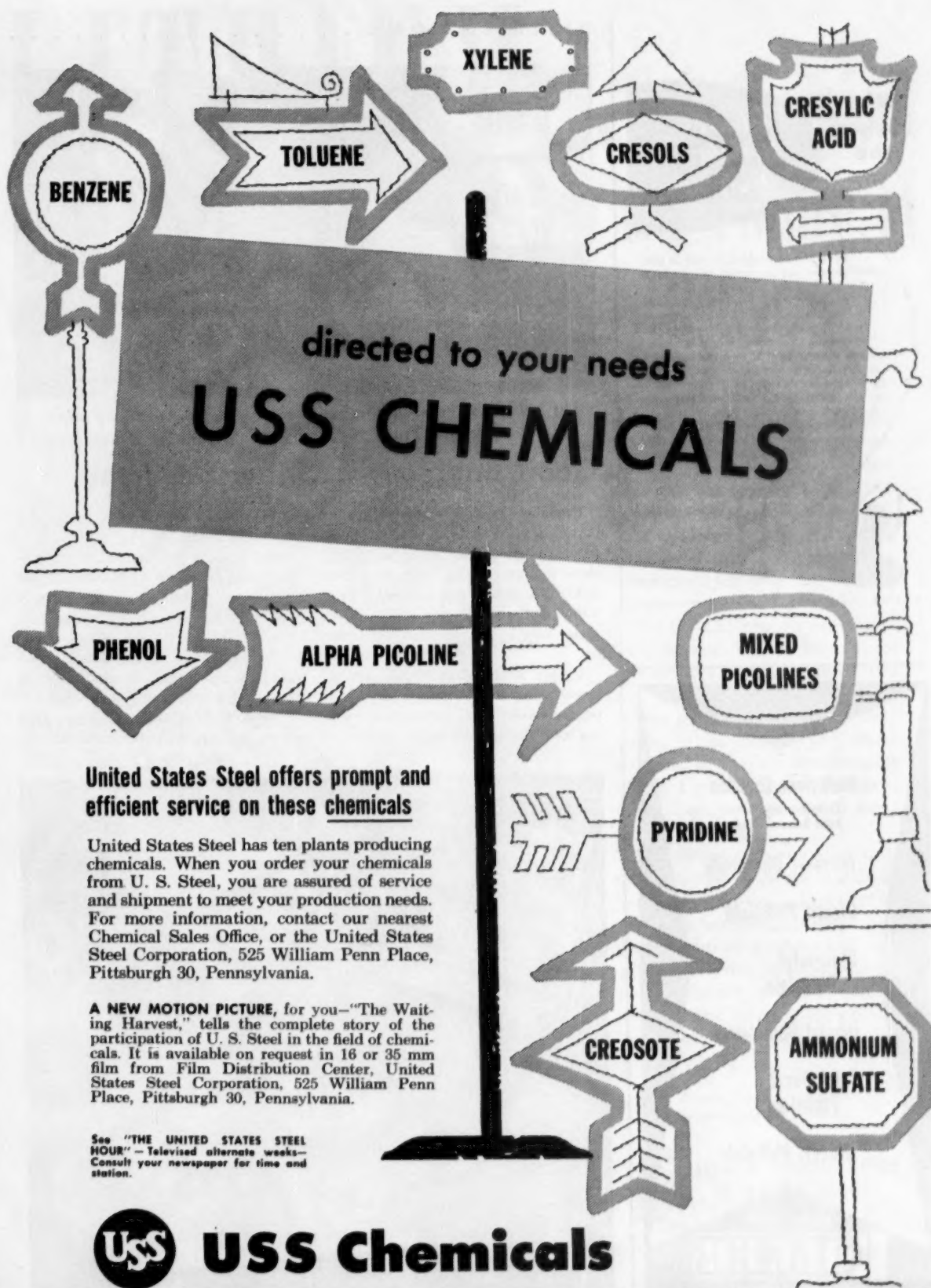
THE SYMPOSIUM, a relatively new promotion idea, was given a whirl by Commercial Solvents Corp. to recognize full-scale start-up of its new nitroparaffin plant at Sterlington, La. The one-day affair was held in New York. CSC executives, pleased with the results, are laying groundwork to repeat it at Chicago and San Francisco soon.

Similar meets have been held by associations or public agencies, but only a few have been sponsored by chemical firms (example: Good-year's symposium on synthetic latex polymers before lumber, paint and paper technicians).

Some 130 technical men and 30

purchasing agents from 45 companies listened to talks by men familiar with development and uses of nitroparaffins. Listeners, ranging from cosmetic manufacturers to ink makers, heard remarks on nitroparaffins in solvents, waxes, plasticizers, drying oils and shortstop agents. A variety of CSC's customers (Pyroxolin Products, Inc., Armour Chemical Division; Petroleum Corp.; U. S. Rubber) contributed to the meeting.

While making plans, CSC feared customers wouldn't be happy about exposing themselves, but results proved the fears unwarranted, Consensus: a worthwhile meeting.



**United States Steel offers prompt and efficient service on these chemicals**

United States Steel has ten plants producing chemicals. When you order your chemicals from U. S. Steel, you are assured of service and shipment to meet your production needs. For more information, contact our nearest Chemical Sales Office, or the United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

**A NEW MOTION PICTURE**, for you—"The Waiting Harvest," tells the complete story of the participation of U. S. Steel in the field of chemicals. It is available on request in 16 or 35 mm film from Film Distribution Center, United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

See "THE UNITED STATES STEEL HOUR"—Televised alternate weeks—Consult your newspaper for time and station.



**USS Chemicals**

**UNITED STATES STEEL**



Who  
makes  
the

*Clearer  
Pyrethrum  
Extract?*

■ As the recognized pioneer in the development and processing of pyrethrum, MGK is the original and first producer of standardized pyrethrum extracts of brilliant clarity.

In addition, we have developed excellent synergized pyrethrum concentrates, dusts and powders. If your insecticidal sprays, dusts or aerosols include the use of pyrethrum in any form, or the use of its companion product allethrin, write for the latest authoritative data. We also have available recent information concerning the most effective synergists, MGK 264 and piperonyl butoxide.



**M** SLAUGHLIN  
**G** ORMLEY  
**K** ING  
*Company*

1712 S. E. FIFTH STREET / MINNEAPOLIS, MINNESOTA

**Methylene Chloride**

Technical and  
Paint Remover Grades

**Tricresyl Phosphate**

**Diocetyl Phthalate**

**DI-Isocetyl  
Phthalate**

**Dibutyl Phthalate**

**Butyl Decyl  
Phthalate**

**Didecyl Phthalate**

Manufactured by

**KOLKER**

CHEMICAL CORPORATION

600 Doremus Avenue, Newark 5, New Jersey  
Telephone - Market 2-4085

DISTRIBUTION . . . . .



**TRADE SHOWS:** Many customers in a short time, flexible exhibits prove . . .

## Good Business in Show Business

Chemical firms are now front-rank participants in trade shows and industrial expositions, according to leading show managers. This year, with over 3,000 U.S. shows representing a \$2.5-billion outlay, a healthy 15% will be major targets for the chemical industry.

Larger firms make liberal use of shows, aim for as many as 200 in a year, consider them an important selling tool. But smaller firms, hesitant to

make five-figure splashes, often shy from exhibiting.

But professional showmen not unnaturally insist that trade exhibits can do a job for firms of all sizes. Clapp and Poliak, Inc. (New York), exposition managers, point out a number of uses. Among them: meeting old and new customers, introducing products, and strengthening area dealers.

**Needn't Be Costly:** Gardner Displays, Inc. (New York) says exhibits



**TYPICAL DESIGNS:** Functional booths can have hidden economies.

# LITHIUM... Key Chemical in the Future of Defense



Lithium is nothing new. The element was discovered nearly 140 years ago, but lay dormant. As late as World War II, only two significant applications utilizing Lithium existed; both were military: Lithium Hydride as a hydrogen carrier in air-sea rescue kits; Lithium Hydroxide for multi-purpose greases.

Today, Lithium serves America's defenses on the ground, in the air, and over and under the sea. You will find Lithium used in low temperature dry cell batteries, in the deicing of parked aircraft, in the air conditioning of naval vessels, in low temperature, all-purpose greases to mention but a few.

The future of Lithium in war, or in defense of peace, is infinite—no one can gauge it. Propellants, new high temperature alloys, cermets, chemical processes—all hold promise of great developments to come. You are invited to explore this treasure house of the present—and the future—with us.

*... trends ahead in industrial applications for Lithium*



**LITHIUM CORPORATION  
OF AMERICA, INC.**

2510 RAND TOWER  
MINNEAPOLIS 2, MINN.

MINES: Keystone, Custer, Hill City, South Dakota • Bessemer City, North Carolina • Cat Lake, Manitoba • Amos Area, Quebec • BRANCH SALES OFFICES: New York  
Pittsburgh • Chicago • CHEMICAL PLANTS: St. Louis Park, Minnesota • Bessemer City, North Carolina • RESEARCH LABORATORY: St. Louis Park, Minnesota

**Hammond**  
MULTI-WALL  
PAPER  
**Bags**  
THE BEST  
CONTAINER FOR  
YOUR PRODUCTS  
HAMMOND  
Betterbags  
Hammond Bag & Paper Company, Inc.  
General Offices: Wellsburg, W. Va.  
Plants in: Wellsburg, W. Va.  
Pine Bluff, Ark. \* Charlotte, N. C.  
Palatka, Fla.

**Keep Pace with WHAT'S NEW at the**  
**25th**  
**EXPOSITION OF CHEMICAL INDUSTRIES**  
COMMERCIAL MUSEUM and  
CONVENTION HALL  
**Philadelphia Dec. 5-9**

So much is happening in the fast-changing chemical process industries that the latest developments often have a way of escaping us for lack of time. There's a way to catch up—and keep up—with the newest in equipment, materials, methods. That way—and it's really the quickest and most effective way—is to personally inspect the more than 500 exhibits at this year's great EXPOSITION OF CHEMICAL INDUSTRIES.

Plan NOW to attend this great exposition... save time by writing today for advance registration and forms for hotel accommodations to

Management: International Exposition Company  
480 Lexington Avenue, New York 17, N. Y.

## DISTRIBUTION . . . . .

can be made for less than \$400, points out economy factors. Good exhibits, claims Gardner, can usually last two years, appear at several shows, and be segmented for use in small conferences or reception rooms.

Exhibitors normally count on about \$150 per front foot, including manufacture of an average display (see cut), floor rent and management charges. The latter provide space, backdrops, dividers and such promotion as invitations and brochures.

Floor space usually runs only 15% or so of total cost, should therefore be used unstintingly. Surprisingly, floor position means little, with preferences dividing about equally between front, back, right or left.

**Budget Ahead:** Primary concern, professionals say, should be budgeting. Shows should be accounted for as individual items, should never be budgeted at the last minute since raiding other budgets leads to corner-cutting and interdepartmental animosity.

Planning, Gardner points out, should be based on audience, story to be told, and money available. To gauge audiences, one can check with show sponsors on attendance figures and names of regular participants.

The better exhibits, designers agree, don't try to make more than a few points, and employ simple, tasteful design. Recommendation: companies inexperienced in exhibiting should work out what they want to say, let professional designers work out how to say it.

Show selection is often determined by competition, but caution should be exercised. Companies waste money by entering overlapping shows where duplication dulls value.

Experienced show people have found some hidden factors in show selection, warn not to overlook them:

- Attendance figures should be analyzed by industry, geographic source, occupational groups.
- Spectator counts don't always indicate if show is growing, is static, or decreasing in value.
- Show dates should be selected for timing with exhibitors' marketing schedules.
- Show frequency is important in determining what cycles meet promotional requirements.
- Rotating annual locations can decrease show value, might make other shows preferable.

Expositions offer dividends, but pitfalls can be perilous. By exploiting the former and skirting the latter, exhibits can be of worth to chemical firms both large and small.

## Cry Mounts for Control

**Pressure is building up for a law to stiffen distribution control of barbiturates and amphetamines.**

Some congressmen are now considering a proposal to put these materials under the provisions of the Harrison Narcotics Act.

The grounds for such a law: illegal traffic in barbiturates and amphetamines, like that in narcotics, promotes crime and juvenile delinquency. And Congress—especially with an election coming up—is opposed to both.

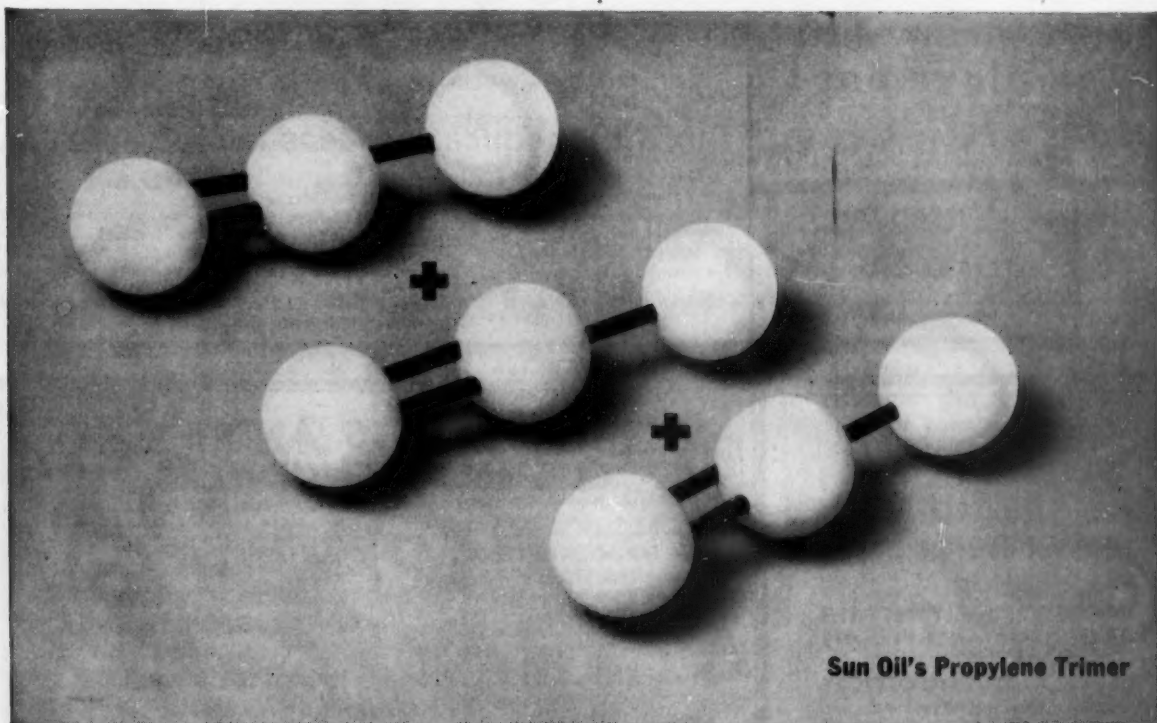
Despite its political attractiveness, such a law is unlikely, since there is strong opposition to it not only from such powerful organizations as the American Medical Assn., and the National Assn. of Retail Druggists, but from the Narcotics Bureau and the Food & Drug Administration, one of whom would have to enforce it.

Probably the simplest answer to the question would be to allocate more money for enforcement of the Durham-Humphrey amendment to the food and drug laws. Top officials of FDA have admitted that with the current 200 inspectors in the country, it can't do an adequate job of checking violations of the present laws—let alone any new ones. But Congress, with the budget pressure of an election year, is not likely to give Food & Drug the substantial money it would need for an adequate-size inspection staff. A 5-10% increase, however, is not an impossibility.

Too, Food & Drug officials feel that since the Durham-Humphrey amendment has never received a good court test, there may be some question as to how broadly the law can be used. For example: if an inspector were to pick up a brown paper bag of amphetamine tablets in a gasoline station, Food & Drug, to take criminal action, not only would have to prove that the pills were made in another state, but also might have to prove that the person in possession of the drug was the person who illegally diverted the material from legitimate trade channels.

One answer to this situation would





## YOU GET CONSISTENT UNIFORMITY FROM SUN OIL'S PROPYLENE TRIMER

Consistent uniformity of Sun's propylene trimer eliminates color problems in end products...makes it give particularly excellent results in alkylation reaction with aryl groups in the production of synthetic detergents.

Of special interest to chemists in many other fields is the fact that butylenes are eliminated from Sun's propylene trimer. It is almost entirely mono-olefinic...averaging 99.5%. The distribution of the olefin types in propylene trimer is indicated as follows:

### Terminal Olefins:

$R-CH=CH_2$	5%
$R_1 > C=CH_2$	12

### Non-terminal Olefins:

$R_1 > C=C < H$ (trans)	16
$H > C=C < R_2$	
$R_1 > C=C < R_2$ (cis)	5
$H > C=C < H$	
$R_1 > C=C < R_2$	46
$R_2 > C=C < H$	

### Remainder:

16  
(Presumably tetra-substituted olefins)

For other information, see your Sun representative, or write for Technical Bulletin #20. Address  
SUN OIL COMPANY, Philadelphia 3, Pa., Dept. CW-11.

### INDUSTRIAL PRODUCTS DEPARTMENT

**SUN OIL COMPANY,** PHILADELPHIA 3, PA.

IN CANADA: SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

November 12, 1955 • Chemical Week

### Typical Specifications

API Gravity @ 60 F . . . . .	57-61
Specific Gravity . . . . .	0.7351-0.7507
Distillation, 5% . . . . .	265 F min
95% . . . . .	275-305 F
Sulfur, wt, % . . . . .	0.02 max
Bromine Number . . . . .	135 min
Color, Saybolt . . . . .	21 min

### SUN OIL IS A MAJOR PRODUCER OF:

Benzene • Toluene • Mixed Xylenes • Propylene Trimer and Tetramer • Sunaptic Acids (High Molecular Weight Naphthenic Acids) • Sulfonate WS (Water Soluble Sulfonate) • PDO-40 (Polymerized Drying Oil)



## employment opportunities

## in the chemical process industries

- **Displayed Rate**—\$19.50 per inch. Contract rates on request. Advertising inch measures  $\frac{3}{8}$  inch vertically on one column. Subject to Agency Commission. 3 columns to a page.
- **Box Numbers** count as one additional line undisplayed ads.

- **Undisplayed Rate**—\$1.80 a line, minimum 3 lines. To figure advance payment, count 5 average words as a line. 10% discount if full payment made in advance for 4 consecutive insertions.
- **Closing Date**—Each Wednesday, 10 days prior to publication date.

### DESIGN ENGINEERS

**Permanent Opportunities With  
McKEE**  
**IN OUR REFINERY, METALS  
OR INDUSTRIAL DIVISIONS  
AT OUR  
CLEVELAND, OHIO OFFICES**

McKee with more than 50 years of successful operation, doing business all over the world; is one of the largest, oldest and best known engineering and contracting firms in the business. The McKee organization continues to grow and expand, thereby offers many present and future opportunities for qualified and experienced engineers and designers in the following fields:

**Piping  
Structural Steel  
Concrete  
Process Heaters  
Equipment Specs.**

**Also  
Electrical Drafts.  
Layout Engineers  
Process Engineers**

Applicants should have at least five years' of experience.

Here is a rare opportunity for you to utilize your engineering abilities and talents.

McKee offers top compensation commensurate with experience and ability. No age limitations.

Transportation & Moving Allowances

PLEASE SEND RESUME TO:

**Edward A. Kolner**

ARTHUR G. McKEE & CO.  
2300 Chester Ave.  
Cleveland 1, Ohio

### CHEMISTS AND CHEMICAL ENGINEERS

- PRODUCTION
- MAINTENANCE
- AREA ENGINEER
- DEVELOPMENT
- PROJECT ENGINEER
- RESEARCH
- PILOT PLANT
- SALES
- TECHNICAL SERVICES
- CONSTRUCTION ENGINEER

#### ► OPENINGS

Newly created positions in each of the above areas.

#### ► WHO

Leading national resins manufacturer in attractive New England city.

#### ► WHY

Multi-million dollar expansion program.

#### ► REQUIREMENTS:

1. Chemists; B.S., or M.S. or Ph.D.
2. Chem Engineers; B.S. or M.S.
3. Mech Engineers; B.S. or M.S.
4. Up to 5 years' experience in any chemical or related industry.

#### ► BENEFITS:

1. Career opportunities for men willing to grow professionally.
2. Program of promotion from within.
3. Proximity to educational institutions.
4. Excellent company insurance and retirement programs.
5. Pleasant living conditions and the best of grade school facilities in recreational New England.
6. Company payment of relocation expenses.

**Our employees know we are advertising. All replies strictly confidential. Please send complete resume and salary requirements to P8208 Chemical Week 330 W. 42 St. New York 36, N.Y.**

#### WANTED

##### FLOOR TILE CHEMIST

Experienced manufacture Vinyl Tile. Location, Midwest. Liberal Insurance and Pension Plan. Reply

P-8234 CHEMICAL WEEK  
330 W. 42nd St., New York 36, N. Y.

##### Chemical Engineering Grads

Recent BS—Chemical Engineering. Major interests in process studies. A well established, growing company in the chemical field, seeks personnel for its central engineering department. Send resume stating education, work experience and salary desired to: Personnel Dept., Metal & Thermit Corp., 100 E. 42nd St., N.Y. 17, N.Y.

#### WANTED

Major Chemical Lines for exclusive distribution within the Rocky Mountain States area.

We Offer:

- 1) Complete mixing and packaging facilities.
- 2) Complete shipping and billing facilities.
- 3) Full sales coverage on the basis you require.

AVAILABLE IMMEDIATELY.

All of the above plus years of experience and knowledge of our area is yours ready made without major outlay.

Phone, Write or Wire:

Expert Chemical Corporation of Colorado  
Phillip C. Mozer, President  
P.O. Box 777, Denver, Colorado

#### Positions Wanted

**Manufacturing Executive with diversified** experience in production, design, construction, and maintenance. Effective in planning, problem solving, work simplification, employee and customer relations. Prefer management position in small or medium size company. Graduate engineer, age 38, married. PW-8239, Chemical Week.

CW states "Good Chemical Salesmen Hard to Find." Harvard MBA, experienced chemical salesman seeks better opportunity in New England. PW-8280, Chemical Week.

(Other Employment ads at bottom of next page)

## TRACERS

- **Displayed Rate**—\$14.75 per inch. Contract rates on request. Advertising inch measures 1/8 inch vertically on one column, 3 columns to a page. Not subject to Agency Commission.
- **Box Numbers** count as one additional line in undisplayed ads.

## to opportunities in the chemical processing industries

- **Undisplayed Rate**—\$1.80 a line, minimum 3 lines. To figure advance payment, count 5 average words as a line. 10% discount if full payment made in advance for 4 consecutive insertions.
- **Closing Rate**—Each Wednesday, 10 days prior to publication date.

## MANAGEMENT SERVICES

### WEST COAST CHEMICAL MANUFACTURING FACILITIES!

Formulation, Packaging, Custom Mixing, Shipping, Warehousing, Wet or Dry, Tank Storage. Now you can service growing western states faster at reduced costs. Projects—small or large.

WRITE: Associated, 1696 Danison Port of Oakland, Oakland 6, Calif.

### SURPLUS WANTED

Chemicals—Resins—Pigments—Solvents  
By-products—Mixtures  
Specializing in off spec materials

#### CHEMSOL, INC.

70 Dod Street, Elizabeth, N. J., EL 4-7654

### BROWN, BLAUVELT & LEONARD

Chemical & Industrial Engineers  
470 Fourth Avenue  
New York 16, N. Y.  
MU. 6-4712

"Dependable Engineering For Profitable Operations"

### Truland Chemical & Engineering Co., Inc. AVAILABLE CUSTOM REFINING FACILITIES

Distillation, Extractions  
Separations, Fractionations  
All types of Crude Mixtures  
Drum Lots - Tank Cars  
By-Products, Residues, Wastes  
Contaminated Solvents  
**WANTED**

Box 426, Union, N. J. Murdock 6-5252

### SURPLUS WANTED

CHEMICALS, PHARMACEUTICALS, OILS  
PLASTICIZERS, RESINS, DYES  
SOLVENTS, PIGMENTS, ETC.

#### CHEMICAL SERVICE CORPORATION

96-02 Beaver Street, New York 5, N. Y.  
MANover 2-6970

### JOHN J. HARTE CO.

Engineers • Constructors

Chemical • Process • Industrial  
Petro • Fertilizer • Pulp & Paper  
Water • Waste • Material Handling

284 Tachwood Dr., Atlanta, Ga.  
New York • Washington • Foreign

### NEED a pilot plant?

or Custom  
Synthesis

Purifications

Distillations

Vacuum Fractionations

If so, integrated facilities are available to you at

#### BERKELEY CHEMICAL CORPORATION

Berkeley Heights, N. J.

CRestview 3-4100 or Longacre 4-1346

### BUYERS OF SURPLUS

CHEMICALS—OILS—SOLVENTS  
DRUGS—RESINS—WAXES  
PLASTICS—COLOR—ETC.

#### BARCLAY CHEMICAL COMPANY, INC.

78 Varlek Street New York 13, N. Y.  
WORTH 4-5120

### WANTED/OFFERED

PLASTICS MATERIALS  
Bought — Sold — Custom Reprocessed  
Virgin and Scrap, all types  
Molding Powders, Resins, Plasticizers  
We buy obsolete molded parts,  
regarding guaranteed.  
A. BAMBERGER CORPORATION  
703 Bedford Ave. Brooklyn, N. Y. MAIn 8-7480

### D. H. KILLEFFER

- TECHNICAL PUBLICITY
- TECHNICAL SALES LITERATURE
- ANNUAL REPORTS
- COMPANY HISTORIES
- BIOGRAPHIES
- TECHNICAL GHOST WRITING

Telephone: SPencer 9-0821

188 Westchester Avenue Tuckahoe 7, N. Y.

### THE C. W. MOFSINGER COMPANY

Personalized Engineering Service  
PETROLEUM REFINING AND CHEMICAL INDUSTRIES

- Surveys—Planning—Process Design
- Engineering Design—Drafting—Procurement
- Supervision of Construction and Operation

906 Grand Avenue, Kansas City 6, Missouri

### For Sale

Hardinge 6' dia. x 22' long Conical Ball Mill with Feeder, classifier & Dust Collector. Perry Equip. Corp., 1415 N. 6th St., Phila. 22, Pa.

Hardinge Ruggles Coles C-2 Rotary Steam Tube Dryer 4' dia. x 30' long. Perry Equip., 1415 N. 6th St., Phila. 22, Pa.

Steel Tanks—17 one-piece welded steel tanks from 2,150—8,600-gallons each, located Michigan. Price 5¢ cents per gallon each. Can be purchased individually. FS-8055, Chemical Week.

### For Sale

Falk Agitator Drives 300 HP, 10:1 Ratio. Unused. Perry, 1415 N. 6th St., Phila. 22, Pa.

Pfaudler Glass Lined Tanks—2 new, never used 300-gallon Pfaudler glass lined tanks, closed, 45" diameter x 47" high (72" overall), with side entering agitators, brand new, immediate delivery at bargain price. FS-8047, Chemical Week.

Stainless Barrels—125 only used Firestone type 304 stainless barrels 15.5 barrels each. Immediate delivery. FS-8050, Chemical Week.

## EMPLOYMENT OPPORTUNITIES

(Continued from previous page)

### Wanted Chemist

Manufacturer of paper coatings and adhesives needs a man for research and development work. Excellent opportunity for the right person to make himself an important part of the organization. Salary will be measurable by his ability. Send letter and resume to: Advance Coatings Company  
Westminster, Massachusetts

### REQUIRED

#### VINYL COLOR MATCHER

Man experienced in color matching and production color control in film and sheeting. Reply

P-8235 CHEMICAL WEEK

330 W. 42nd St., New York 36, N. Y.

### WANTED

#### VINYL CHEMIST

Manufacturer calendered film and vinyl sheeting requires experienced chemical engineer or chemist. All replies confidential. Reply

P-8233 CHEMICAL WEEK

330 W. 42nd St., New York 36, N. Y.

#### CHEMISTS—CHEMICAL ENGINEERS

B.S. to Ph.D. Beginners—Experienced

We place EXCLUSIVELY with Chemical Companies

Call—Come In—Send 5 resumes

SELECTIVE PLACEMENT

EMPLOYMENT AGENCY

17 William St. MI 2-3355 Newark, N. J.  
O. A. Reed, Jr., N.Bc. S. Goodman, N.Bc.

### JAMES P. O'DONNELL

Engineers

Professional Engineering for the  
Petroleum and Process Industries

39 Broadway  
New York City

Bowie Bldg.  
Beaumont, Texas

### SIRRIE

ENGINEERS

Plant Design & Surveys covering Chemical Electrochemical and Metallurgical Production; Industrial Waste Disposal; Water Supply & Treatment; Analysis & Reports

J. E. SIRRIE CO.

Greenville South Carolina

### TECHNICAL ENTERPRISES, Inc.

Engineers—Consultants—Chemists

to  
Chemical—Food—Pharmaceutical Industries  
Complete Engineering Services  
Product & Process Research & Development

SPECIALISTS IN SMALLER MANUFACTURING PLANTS

31 South St., New York 4, N. Y. WH 8-1544

### Wisconsin Alumni Research Foundation

Project Research Consultation and Production Control Services in Biochemistry, Chemistry, Bacteriology, Pharmacology, and Insecticide Testing and Screening.

Write for price schedule

Wisconsin Alumni Research Foundation  
P.O. Box 2059-G • Madison 1, Wisconsin



## DISTRIBUTION . . . . .

be to amend the laws to define barbiturates and amphetamines as drugs in interstate commerce, in the way that oleomargarine is now defined. But substantial legal questions exist.

Such a provision would have little chance of becoming law in the first place because of opposition by pharmacist and druggist organizations,

who would consider it a dangerous precedent toward defining all drugs as items in interstate commerce—thus making druggists liable to complete federal supervision.

Considered the best answer so far is a possible amendment to the law, which would make illegal the possession of barbiturates and amphetamines

by anyone who did not get them on a doctor's prescription or who is not "regularly and lawfully" engaged in their manufacture and sale. A person arrested under such a statute would have to prove that the drugs were made in the state to escape federal prosecution, and would then open himself to action by state authorities.

## CHEMICAL WEEK • ADVERTISERS INDEX

November 12, 1955

ALLIS-CHALMERS MANUFACTURING CO. 84  
Agency—Compton Adv., Inc.  
AMERICAN BRITISH CHEMICAL SUPPLIES, INC. 98  
Agency—Richard Lewis, Adv.  
AMERICAN CYANAMID CO. 69  
Agency—Hazard Adv. Agency  
AMERICAN HARD RUBBER CO. 64  
Agency—W. L. Towne Adv.  
AMERICAN POTASH & CHEMICAL CORP. 82  
Agency—The McCarty Co.  
ANIRIA CHEMICALS DIV., GENERAL ANILINE & FILM CORP. 23  
Agency—The House of J. Hayden Twiss  
ATLANTIC REFINING CO. 79  
Agency—N. W. Ayer & Son, Inc.  
AUTOMATIC SPRINKLER CORP. OF AMERICA 61  
Agency—The Robert A. Joyce Co.  
BAKER CASTOR OIL CO. 46  
Agency—Samuel Croot Co.  
BAKER PERKINS, INC., CHEMICAL MACHINERY DIV. 3rd Cover  
Agency—Price, Tanner & Willott, Inc.  
BALTIMORE & OHIO RAILROAD 84  
Agency—Richard A. Foley, Adv.  
BENIS BRO. BROS. CO. 98  
Agency—Gardner Adv. Co.  
BLAW-KNOX CO. 63  
Agency—Ketchum, MacLeod & Groves, Inc.  
BORDEN CO., THE CHEMICAL DIV. 29, 52, 85  
Agency—Fuller & Smith & Ross, Inc.  
BUTLER MFG. CO. 38  
Agency—Aulrey, Finlay, Marley & Hodgson, Inc.  
CARBIDE & CARBON CHEMICALS CO. DIV. OF UNION CARBIDE & CARBON CORP. 51, 92  
Agency—J. M. Mathes, Inc.  
CATALYTIC CONSTRUCTION CO. 89  
Agency—Doramus-Ehlerman Co.  
CHEMICAL INDUSTRIES EXPOSITION 112  
Agency—O. B. Tyson & Co., Inc.  
CHURCH & DWIGHT CO. 100  
Agency—J. Walter Thompson Co.  
CLINAX MOLYBDENUM CO. 33  
Agency—G. M. Basford Co.  
CORNWELL CHEMICAL CORP. 12  
Agency—Picard, Marvin & Redfield Assoc.  
DAVIES NITRATE CO. 100  
Agency—Malcolm Serence Co.  
DOW CHEMICAL CO., THE 37  
Agency—MacManus, John & Adams, Inc.  
DRAGON CORP. 28  
Agency—The Jayme Organization  
DU PONT DE NEMOURS & CO., INC. 11  
ELECTROCHEMICALS DEPT. 11  
Agency—Batten, Barton, Durstine & Osborn, Inc.  
EASTMAN CHEMICAL PRODUCTS, INC. 83  
Agency—Fred Wittner, Adv.  
EMCO CORP., THE 8  
Agency—Mataia Co.  
EL DONADO OIL WORKS 96  
Agency—Sidney Garfield & Assoc.  
EMERY INDUSTRIES, INC. 35  
Agency—Hutthrauff & Ryan, Inc.  
EMPIRE TRUST CO. 92  
Agency—Doramus & Co.  
FEDERATED METALS DIV. AMERICAN SMELTING & REFINING CO. 74  
Agency—John Mather Lupton Co.  
FERGUSON CO., THE W. H. 10  
Agency—The Hayless-Kerr Co.  
GENERAL AMERICAN TRANSPORTATION CORP., TERMINAL DIV. 87  
Agency—Weiss & Geller, Inc.  
GENERAL CHEMICAL DIV., ALLIED CHEMICAL & DYE CORP. 4th Cover  
Agency—Albertson & Currier, Inc.  
GIRDLER CO., THE 36  
Agency—The Griswold-Ehlerman Co.  
GLYCERINE PRODUCERS ASSOC. 78  
Agency—G. M. Basford Co.

GLYCO PRODUCTS CO. 48  
Agency—G. M. Basford Co.  
GOODYEAR TIRE & RUBBER CO., INC. 1  
Agency—Kudine Agency, Inc.  
GOODRICH CHEMICAL CO. 83  
Agency—Griswold-Ehlerman Co.  
GREAT LAKES CARBON CORP. 102  
Agency—Davis, Parsons & Ströhmeier, Inc.  
HAMMOND BAG & PAPER CO. 112  
Agency—Walker & Downing Adv.  
HARSHAW CHEMICAL CO. 105  
HAYES CORP. 89  
Agency—Geore-Marston Adv.  
HERCULES POWDER CO. 15  
Agency—Fuller & Smith & Ross, Inc.  
HOOKER ELECTRO-CHEMICAL CO. 97  
Agency—Charles L. Rumrill & Co.  
INDUSTRIAL PROCESS ENGINEERS 72  
Agency—Beck Adv. Agency, Inc.  
INLAND STEEL CONTAINER CORP. 16  
Agency—Weiss & Geller, Inc.  
KELLOGG CO., M. W. 107  
Agency—Killington & Co., Inc.  
KOLKER CHEMICAL CORP. 110  
Agency—G. M. Basford Co.  
KOPPERS CO. 62  
Agency—Batten, Barton, Durstine & Osborn, Inc.  
KRAFT BAG CORP. 83  
Agency—Arthur A. Judson, Inc.  
LINDE AIR PRODUCTS CO., DIV. OF UNION CARBIDE & CARBON CORP. 49  
Agency—J. M. Mathes, Inc.  
LINDSAY CHEMICAL CO. 9  
Agency—G. Franklin Brown, Inc.  
LITHIUM CORP. OF AMERICA 111  
Agency—Keystone Adv., Inc.  
MALLINCKRODT CHEMICAL WORKS 65  
Agency—Smith & Williams Adv.  
METABAP CHEMICAL CO. 22  
Agency—Lewis, Williams, & Baylor, Inc.  
McLAUGHLIN GORMLEY KING CO. 110  
Agency—The Alfred Colle Co.  
MONSANTO CHEMICAL CO. 30-31  
Agency—Gardner Adv. Agency  
PITTSBURGH COKE & CHEMICAL CO. 7  
Agency—Walker & Downing Adv.  
PLAX CORP. 45  
Agency—The Charles Brunello Co.  
PRESSED STEEL TANK CO. 79  
Agency—The Buchen Co.  
PROCON, INC. 101  
Agency—Sam J. Gailay  
PUBLICKER CHEMICAL CORP. 4-5  
Agency—Al. Paul Lefton Co., Inc.  
REILLY TAR & CHEMICAL CORP. 27  
Agency—The House of J. Hayden Twiss  
RELIANCE ELECTRIC & ENGINEERING CO. 71  
Agency—Wellman, Buschman & Hines, Inc.  
REYNOLDS METALS CO. 91  
Agency—Clinton E. Frank, Inc.  
RHEEN MANUFACTURING CO. 3  
Agency—Campbell-Bwald Co.  
ROHM & HAAS CO. 73  
Agency—Arnold, Preston, Chapin, Lamb & Keene, Inc.  
SHELL CHEMICAL CORP. 75  
Agency—J. Walter Thompson Co.  
SONIO CHEMICAL CO. 47  
Agency—McCann-Erickson, Inc.  
SPENCER CHEMICALS CO. 41  
Agency—Bruce B. Brewer & Co.  
STAUFFER CHEMICAL CO. 80  
Agency—The House of J. Hayden Twiss  
SUN OIL CO. 113  
Agency—Hutthrauff & Ryan, Inc.  
TENNESSEE CORP. 38  
Agency—Crawford & Porter, Inc.  
TRUBEK LABORATORIES, INC., THE 89  
Agency—Ray Ellis, Adv.

U. S. STEEL CORP. CHEMICALS DIV. 109  
Agency—Batten, Barton, Durstine & Osborn, Inc.  
VANDERBILT CO., R. T. 88  
Agency—F. B. Advertising, Inc.  
VICTOR CHEMICAL WORKS 57-60  
Agency—Russell M. Seeds Co.  
WALLACE & TIERNAN, INC. 44  
Agency—Branstater Assoc., Inc.  
WESTVACO MINERAL PRODUCTS DIV., FOOD MACHINERY & CHEMICAL CORP. 2nd Cover  
Agency—James J. McMahon, Inc.  
WEST VIRGINIA INDUSTRIAL & PUBLICITY COMMISSION 6  
Agency—Advertising, Inc.  
WISCONSIN ALUMNI RESEARCH FOUNDATION 100  
Agency—Arthur Towell, Inc.  
WOLF & CO., JACQUES 68  
Agency—Riedl & Freede, Inc.  
WYANDOTTE CHEMICAL CORP. 42-43  
Agency—Brooke, Smith French, & Dorrance, Inc.

### tracers SECTION

(Classified Advertising)

F. J. Eberle, Asst. Mgr.

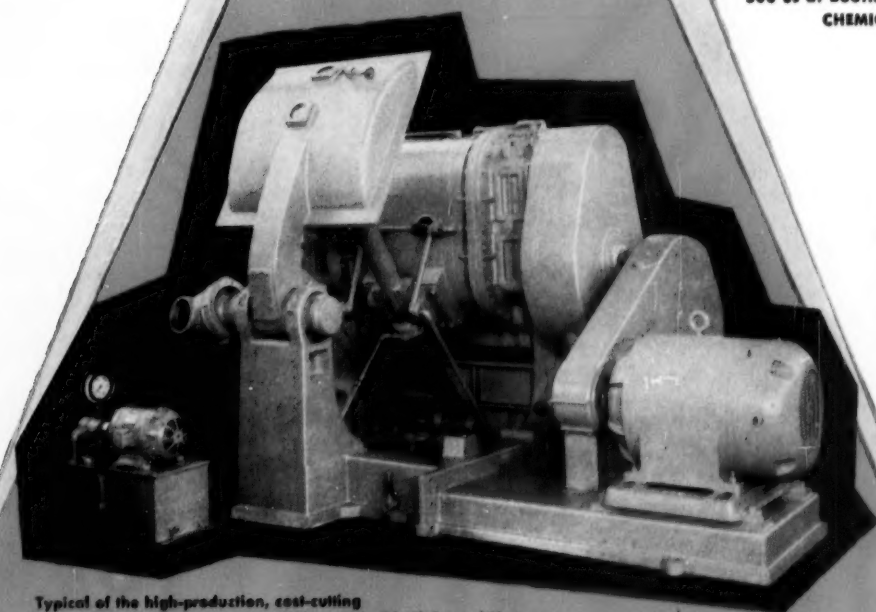
CHEMICALS: Offered/Wanted 115  
EMPLOYMENT 114 & 115  
EQUIPMENT: Used/ surplus New  
For Sale 115  
MANAGEMENT SERVICES 115  
SPECIAL SERVICES 115

## ADVERTISING STAFF

Atlanta 3 William D. Lanier, 1821 Rhodes-Haverty Bldg., Walnut 8778-2388  
Boston 16 250 Park Square Building Hubbard 2-7160  
Chicago 11 Alfred D. Becker, Jr., Francis E. Stewart, 520 N. Michigan Ave. Mohawk 4-5800  
Cleveland 15 Vaughn K. Dissette, 1510 Hanna Bldg., Superior 7000  
Dallas 1 James Cash, First National Bank Bldg., Prospect 7-5044  
Detroit 26 856 Penobscot Bldg., Woodward 2-1793  
Los Angeles 17 William C. Woolston, 1111 Wilshire Blvd., Madison 6-4823  
New York 36 Knox Armstrong H. L. Brown, L. Charles Todaro, Charles F. Onasch, 330 West 42 St., Longacre 4-3000  
Philadelphia 3 William B. Hannum, Jr., Architects Bldg., 17th & Sansom Sts., Rittenhouse 6-0670  
Pittsburgh 22 919 Oliver Bldg., Atlantic 1-4707  
San Francisco 4 T. Evans Wyckoff, 68 Post St., Douglas 2-4606  
St. Louis 8 3615 Olive St., Continental Bldg., Lucas 4967

*B-P  
mixers  
designed and  
built for  
maximum efficiency  
regardless  
of product*

See us at Booth 540-544 at the  
CHEMICAL EXPOSITION



Typical of the high-production, cost-cutting  
Baker Perkins chemical processing equipment is this Universal Vacuum  
Mixer, size 15 TWEM. Working capacity 100 gallons; total 175 gallons.  
Constructed of Stainless Steel, jacketed for 125 psi heating or cooling.

**BAKER PERKINS INC.**

*Chemical Machinery Division • Saginaw, Michigan*



# "HYPO" USERS...

## Here's Why You Save Money... Get Better Results, Better Service

The Preferred  
"Hypo" for



**PHOTOGRAPHIC SUPPLIES**  
Packaged and bulk fixing agents



**LEATHER PROCESSING**  
Two-bath chrome tanning



**DRUGS AND COSMETICS**  
For bath salts, some  
disinfectants, parasiticides



**TEXTILES**  
Assist in dyeing, printing; also used  
in making synthetic dyes.



**MISCELLANEOUS USES**  
Bleaching groundwood, straw, fur.  
Organic chemical manufacture; water  
treatment.

Stocked for immediate shipment  
from distribution points  
throughout the U.S.A.

with

### GENERAL CHEMICAL

## Anhydrous SODIUM THIOSULFATE

#### Major Processing Advantages

General's Anhydrous "Hypo" is a sparkling, crystalline, water-free product that assays 98%  $\text{Na}_2\text{S}_2\text{O}_3$ . It is free from caking tendencies common to ordinary hydrated "Hypo" . . . dry feeds well . . . dissolves rapidly in water to give clear colorless solutions free of troublesome impurities.

#### Improved Handling and Storage

High density and reduced bulk add to shipping economy and handling ease. Long shelf life is another advantage of particular importance to manufacturers of photographic supplies.

#### Now—3 Producing Centers

The demand for General's Anhydrous Sodium Thiosulfate has resulted in *three* producing centers . . . a three-to-one advantage over any other supplier. Newest of these recently went on the line at North Claymont, Del. Yes, with General's three-point source of supply, you get shorter shipping hauls, lower cost, dependable deliveries, better service. Add this to top quality—and you know why so many careful buyers insist on General Chemical Anhydrous "Hypo." Make it your choice, too.

• • •

For Hydrated "Hypo" . . . order General Chemical's high quality Standard Sodium Thiosulfate. Produced in grade size for all requirements.



Basic Chemicals for American Industry

### GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo  
Charlotte • Chicago • Cleveland • Denver • Detroit • Greenville (Miss.) • Houston  
Jacksonville • Kalamazoo • Los Angeles • Milwaukee • Minneapolis • New York  
Philadelphia • Pittsburgh • Providence • San Francisco • Seattle • St. Louis  
Yakima (Wash.)

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver